STANDARDS SETTING

SYNTHESIS OF THREE PROCEEDINGS

PROCEDURES & FINDINGS

JULY 2001

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INTRODUCTION / BACKGROUND

With the amendments to the Kentucky Education Reform Act of 1998 (HB 53), a number of major changes in the Commonwealth's school assessment and accountability program were implemented in the new Commonwealth Accountability Testing System (CATS). These changes were of such significance that the student performance levels that had been the basis of most calculations in the KIRIS system clearly needed to be reconsidered. The Kentucky Board of Education came to this conclusion at its August 1999 meeting after consultation with the National Technical Advisory Panel on Assessment and Accountability (NTAPAA), the School Curriculum, Assessment, and Accountability Council (SCAAC), and the Office of Education Accountability (OEA). NTAPAA proposed a six-step process for reconsidering the student performance standards (Figure 1). After careful consideration, the Board accepted this proposal (Attachment A).

There was a broad consensus among educators that the reasons cited in the NTAPAA paper were indeed reasons for reconsidering the standards that had evolved in the old KIRIS structure. Reasons cited by the technical panel include:

- New multiple choice and norm referenced test components were added into the mix of assessments at all levels, [1]
- Test length in select areas was limited,
- The Core Content was revised which led to test content changes,
- The grades tested in select content areas were changed,
- A number of test items previously used were eliminated or revised,
- The method for equating tests across biennia to monitor change was altered, and
- The school accountability system changed. [2]

These factors presented both practical and technical barriers to *transporting* the 1992 KIRIS standards forward to the new Kentucky Core Content Test (KCCT). There were other compelling reasons within the larger educational community to re-establish KCCT student performance standards. There was little confidence in the KIRIS standards. These standards had been criticized in earlier studies, and perhaps more importantly, there was no readily apparent means of clearly describing the instructional expectations or program that could reasonably be expected to produce Proficient student performance.

EXECUTIVE SUMMARY OF STANDARDS SETTING PROCEDURES

The following is a summary of the first five steps in the Standards Setting Procedure.[3] Figure 1 summarizes the connections of each of the steps.[4] In brief, Step 1 was designed to establish a common set of draft descriptors of student performance associated with Novice, Apprentice, Proficient, and Distinguished levels. These were necessary to provide a common beginning point for each of three different standards setting procedures defined in Steps 2 through 4. Step 2 called for the application of the CTB Bookmark Standards Setting Procedure that required teacher panels to review items on the Spring 2000 Kentucky Core Content Test within the context of the Draft Performance Level Descriptors established in Step 1. Step 3 called for the application of the Jaeger-Mills Standards Setting Procedure that required teacher panels to review complete student responses from the Spring 2000 administration of the Kentucky Core Content Test within the context of the Draft Performance Level Descriptors established in Step 1. Step 4 called for the application of the Contrasting Groups Standards Setting Procedure that required teachers to review student classroom work within the context of the Draft Performance Level Descriptors established in Step 1 and these teacher judgments are related to student performance on the Spring 2000 Kentucky Core Content Test. Step 5 requires the synthesis of the data and recommendations resulting from each of the three standards setting procedures carried out in steps 2, 3, and 4. Step 6 provides for the Kentucky Board of Education to consider the results and impact of each of the first 5 steps and to establish the cut-points that define Novice, Apprentice, Proficient, and Distinguished student performance.

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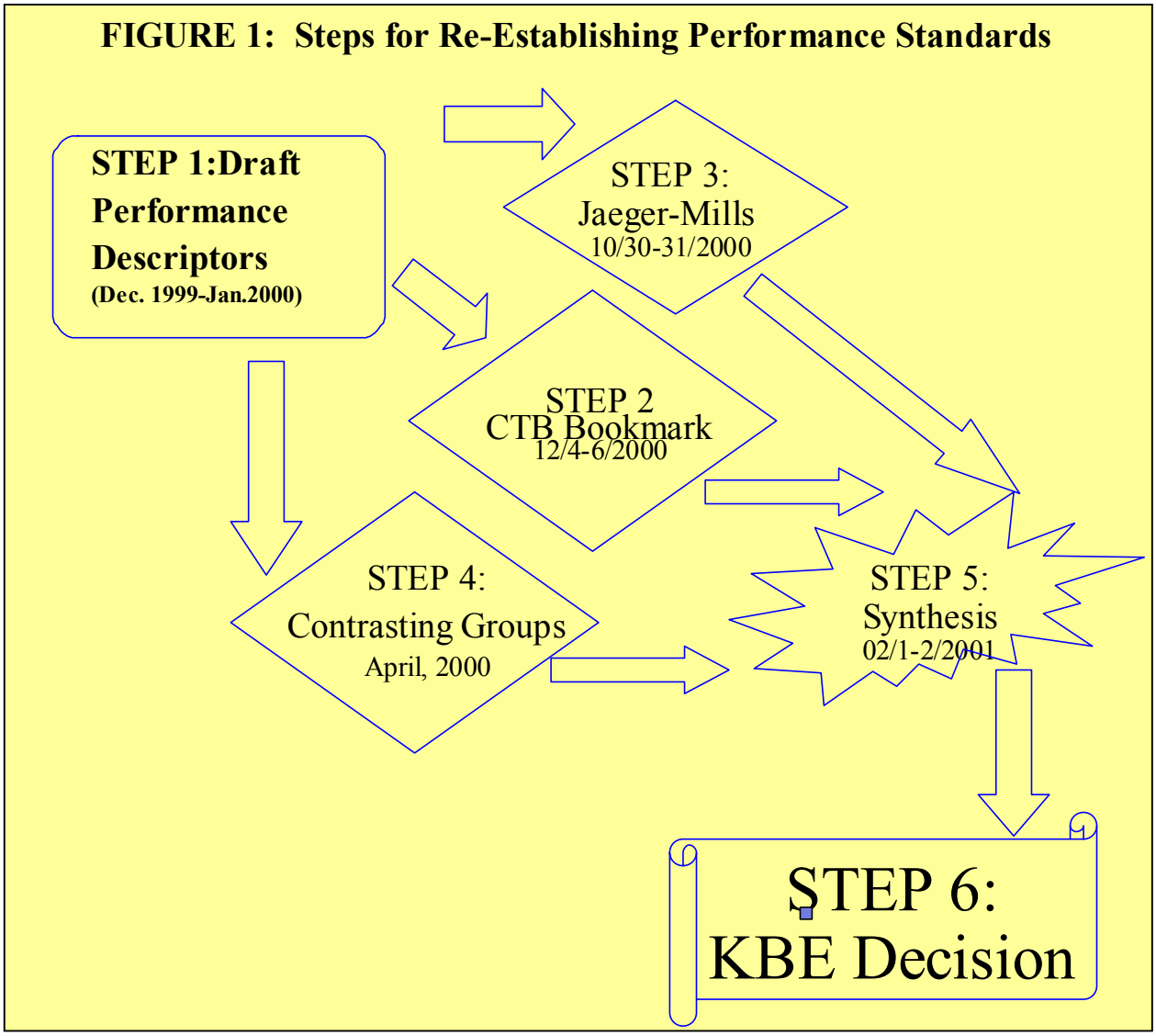
[1] The KIRIS standards were based on reviews of three open response items per content area. The KCCT consists of both multiple choice and open response items. Significant changes were made to index calculation procedures and consequences.

[2] ***Recommendations for Establishing CATS Assessment and Accountability Performance Standards and Cutscores***: National Technical Advisory Panel on Assessment and Accountability – July 1999

[3] The sixth step in the process is the review by the Kentucky Board of Education scheduled for April – June 2001.

[4] The steps are discussed in the order in which they were presented in the original National Technical Advisory Panel on Assessment and Accountability paper – (Attachment A).



The decision was made to move forward with the resetting of standards in six content areas across the elementary, middle, and high school areas

CONTENT	GRADE					
	4	5	7	8	10	11
Reading	X		X		X	
Mathematics		X		X		X
Science	X		X			X
Social Studies		X		X		X
Arts & Humanities		X		X		X
Practical Living / Vocational Studies		X		X	X	

Step 1: Consider, discuss and establish the CATS performance standards: establish a process to review the past system, and then systematically provide for modifications and elaboration as appropriate.

This step was accomplished during the fall of 1999 and January of 2000. The key in beginning this step was the Kentucky Board of Education's decision to maintain the four student performance level names (Novice, Apprentice, Proficient, and Distinguished – N/A/P/D), but to clearly re-think and define what is meant by these labels. The next key activity was to engage Kentucky teachers in drafting more specific descriptors of the four student performance levels specific to content and level of school. Initially, there were 88 teachers involved in this step: four teachers per content area (reading, mathematics, science, social studies, arts and humanities, practical living/vocational studies, and writing) at three levels of instruction (elementary, middle, and high school). This teacher activity took place in December of 1999 and January of 2000. Teachers were selected for this activity from the Content Advisory Committee membership mainly because of their familiarity with the Kentucky Core Content for Assessment and the assessment item pool. Additionally, teachers were selected to provide the widest possible regional and ethnic representation.[5]

It is important to think of these descriptors as draft for at least two reasons. First, these descriptors were critical in establishing a common beginning point for all three standards setting procedures (Steps 2-4). It would have been difficult to have compared or synthesized recommendations from Steps 2-4 if they had been based on very different perceptions of Proficient work. However, because these descriptors of performance levels precede the final decision about where the cut-points on the KCCT will be set, they must remain draft until teachers have had an opportunity to review the content of the assessment and work of real students within the established ranges on the assessment. This final review might result in the need to refine the descriptors to assure their alignment with the item pool on which the assessment is based.[6]

The *final* descriptors of student performance levels must be consistent with the content teachers observe within the actual assessment within the context of the Novice/Apprentice/Proficient/Distinguished cut-points established by the Kentucky Board of Education.

In the end, it is a policy consideration certainly within the prerogative of the Board to either refine the performance level descriptors to conform to the content of the assessment and the established cut-points, or to refine the assessment to conform to the standards descriptors and the established cut-points. However, the performance level descriptors, the content of the assessment, and the cut-points establishing the student performance standards must be congruent if instruction is to have the focus necessary to reach the state goal of 100 on the accountability index by 2014.

> ***Writing:*** At the conclusion of Step 1, a subcommittee of writing teachers concluded that the writing standards are appropriately defined through the writing portfolio and on-demand assessment procedures, and that the changes in the assessment system described above do not meaningfully impact these standards. This subcommittee of teachers recommended that the student performance described in the writing portfolio training process and the associated training portfolios adequately describe student performance expectations at each level: (N/A/P/D). In addition, the writing advisory process concluded that the current writing standards are still appropriate. Therefore, they recommended not changing the writing standards. The Writing Advisory Committee concurred with this recommendation. Within the writing advisory process, there was consensus that changing these standards is not necessary, and would only serve to confuse a set of standards that is well understood within the writing curriculum. For these reasons, writing standards were not redefined in this procedure.
>
> ***Alternate Portfolio:*** The Alternate Portfolio is also a component of the Commonwealth Accountability Testing System intended for students with severe to profound disabilities and who, with all accommodations and adaptations possible, do not participate in the regular curriculum. The above changes did not impact the Alternate Portfolio, and therefore, this component was also excluded from this standards setting procedure.

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[5] A listing of participating teachers can be provided on request.

[6] Content alignment of the assessment and the Kentucky Core Content for Assessment is addressed in other technical documentation.

The objective of Step 1 was to define a set of student performance levels specific enough:

A. To permit the Kentucky Board of Education and the Kentucky Department of Education to understand the level of instructional expectation defined as Novice, Apprentice, Proficient, and Distinguished in each content area at the elementary, middle, and high school levels.

B. To permit each of the three standards setting procedures recommended by NTAPAA to begin with a common understanding of each performance level specific to subject and grade level.

Teachers were asked to consider this task in three phases:

Phase 1: Establish a general definition of the Novice, Apprentice, Proficient, and Distinguished performance standards:
Phase 2: Establish a content specific definition of these performance standards; and
Phase 3: Establish a content specific definition of these performance standards applicable to the elementary, middle, and high school levels.

The structure of the meeting encouraged a common beginning point guiding the total outcome, and a vertical conversation that encouraged an understanding of the expectations within a content area at each level of schooling.

These descriptors were initially drafted at the December two-day meeting, posted on the Department's Website for broad review, and completed in late January for presentation to the Board. These Draft Performance Level Descriptors are included as Attachment G.

Step 2 Panels carry out the CTB Bookmark cut-score procedure

The CTB Bookmark Procedure, as did the other two procedures, started with a firm grounding in the Kentucky Core Content for Assessment and the Step 1 Draft Student Performance Level Descriptors. Within a *secure environment*, teachers were asked to review an Ordered-Item Test Booklet[7]. This book of items consisted of items from two of the 6 forms of the Spring 2000 Kentucky Core Content Test in reading, mathematics, science, and social studies. In order to increase the number of items reviewed, three of the 12 forms of the assessment were used in arts and humanities, and practical living/vocational studies[8]. Because the total set of forms include 144 multiple choice items and 36 open response items in reading, mathematics, science, and social studies, it would have been physically and fiscally impossible to have reviewed the entire item pool. The corresponding numbers for Arts & Humanities and Practical Living / Vocational Studies was 96 multiple choice and 24 open response items. Forms were selected to be representative of the larger item pool.

Based on actual student performance, items were presented in the book from easiest to hardest. Open-response items were presented at four different points in the book, reflecting the relative difficulty of obtaining score points of 1, 2, 3, and 4. Teachers reviewed these items systematically and placed *bookmarks* at the point where the next most difficult item seemed to represent a change from one performance level to the next. Figure 2 illustrates this process.

The teacher participation target was to have 18 teachers per content area per level (elementary, middle, and high school). Teachers of that content and level were assigned to appropriate committees. The target was to obtain participants that were regionally and ethnically representative of the Commonwealth. Teachers from across the Commonwealth were invited to participate. While this target participation was generally met, as the deadline for finalizing the teacher groups grew near, the Department made all possible efforts to fill openings with teachers with the content and grade level credentials. Two hundred ninety-two (292) teachers participated with no group having fewer than 14 teachers.[9]

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[7] These Ordered-Item Booklets contain secure test items, but may be reviewed in a secure environment by Board members signing a nondisclosure form.

[8] These tests are shorter in length then the reading, mathematics, science, and social studies.

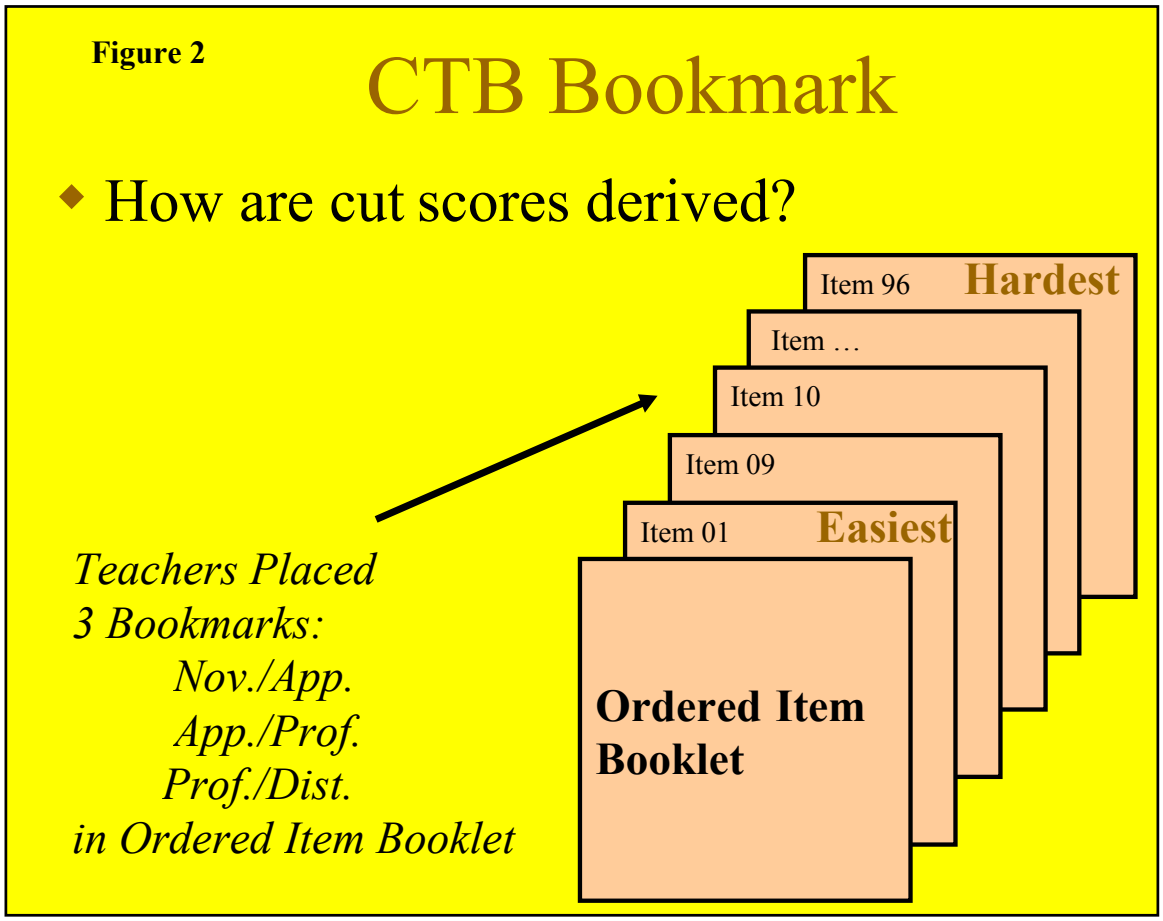
[9] A list of participating teachers can be provided on request. The teacher reviews took place December 4-6, 2000 in Lexington.

After three rounds of discussion allowing the teacher committees (content/grade specific) to consider the degree of consensus existing within the group about the placement of the *bookmarks* in the ordered-item books, the median *bookmark* was converted to a cut-point. This was the median *bookmark* of the 14 to 18 teachers in each of the content/grade specific panels of teachers as opposed to the median of the three sub panels.. Each item in the book is associated with a particular scale score(s). Therefore, it is possible to translate a particular *bookmark* to a recommended cut-point in scale score units.[10]

The CTB Bookmark Procedure has been implemented in different ways regarding the use of *impact* data. In some cases, the impact data have been made available at certain points in the procedures. In other cases, these data have not been introduced. In this application of the procedure, the *impact* data was not made available because:

- This data was felt to be more appropriate in the Step 5 Synthesis Procedure and played a key role in this step.
- There were 18 separate standards setting activities being conducted simultaneously at the same site and the instructional emphasis could easily have been lost to an exercise between teacher panels in making the *numbers* match.

Figure 2



The strength of this procedure is that it is based on actual test items ordered by difficulty based on observed spring 2000 student performance. There was a structured procedure for teachers to consider the content and cognitive demands of these items within the context of the Step 1 Draft Performance Level Descriptors. The procedure may have been limited by use of only ¼ to 1/3 of the total assessment item pool. While teachers did not formally comment on the draft performance level descriptors, the process did describe content and cognitive attributes associated with each item that were considered in the synthesis (Step 5) when teachers did refine these descriptors.

[10] Scale scores are the basic unit underlying the Kentucky Core Content Test and range from 325 to 800. They are used to keep different forms of the assessment on the same scale within a year, and the assessment on the same scale across years.

Step 3: The Jaeger-Mills method is implemented

As noted above, the Jaeger-Mills Procedure began with a firm foundation built on the Kentucky Core Content for Assessment and the Step 1 Draft Student Performance Level Descriptors. Different teacher panels whose membership met the specifications described above for the CTB Bookmark Procedure were formed. Within a *secure environment* these teachers closely studied and reviewed items from the Spring 2000 KCCT, and reviewed the actual work and scores of a broadly representative sample of students on two forms of the assessment in reading, mathematics, science, and social studies, and on three forms of the assessment in Arts & Humanities and Practical Living / Vocational Studies[11]. Each teacher was then directed to place each student's performance into one of three levels (i.e., low, middle, or high) of Kentucky's performance categories of Novice, Apprentice, Proficient, or Distinguished based on his/her evaluation of the student work (judgments were holistic considering both multiple choice and open response work of a student). There were opportunities for teachers to adjust their initial judgments as the procedure moved along. Each panelist reviewed approximately 60 student responses. These student responses were selected from the spring 2000 KCCT administration to be representative of performance across the scale. Figure 3 depicts this process.

In reading, mathematics, science, and social studies, half of each panel reviewed each form of the assessment; in arts & humanities, 1/3rd of each panel reviewed a form. After the initial training, panelists worked independently on their classifications of work consistent with the design of the procedure.Each student response reviewed by the teacher committees (content/grade specific) was associated with a spring 2000 scale score. The median scale score of the responses judged to be high novice and low apprentice, high apprentice and low proficient, and high proficient and low distinguished were used to establish recommended cut-points. Teachers were aware of the raw scores associated with each student response, but were not aware of the scale score.

The teacher panelists were not made aware of the impact or results of their recommendations at this point because it was not a documented component of the procedure as it had previously been applied. In addition, it would have been inappropriate to have had this information within the education community because this phase was implemented ahead of the CTB Bookmark Procedure and could have interfered with the proper implementation of the CTB Bookmark Procedure.

As with the CTB Bookmark Procedure, the teacher participation target was to have 18 teachers per content area per level (elementary, middle, and high school). Teachers of that content and level were assigned to appropriate committees. The target was to obtain participants that were regionally and ethnically representative of the Commonwealth. Teachers from across the Commonwealth were invited to participate. While this target participation was generally met, as the deadline for finalizing the teacher groups grew near, the Department made all possible efforts to fill openings with teachers with the content and grade level credentials. Three hundred eleven (311) teachers participated with no group having fewer than 15 teachers.[12]

The strength of this procedure is that teachers reviewed the actual work and scores of a broadly representative sample of students on the most current administration of the KCCT. Limitations were cited in two areas: time and assessment. More time was needed for training and for ***refining*** descriptors, and in some content areas the assessment may not have allowed students to demonstrate distinguished performance relative to the *draft* descriptors.

Teachers engaged in the activity of judging student performance had an opportunity to suggest changes to the emerging descriptors associated with the Performance Standards.

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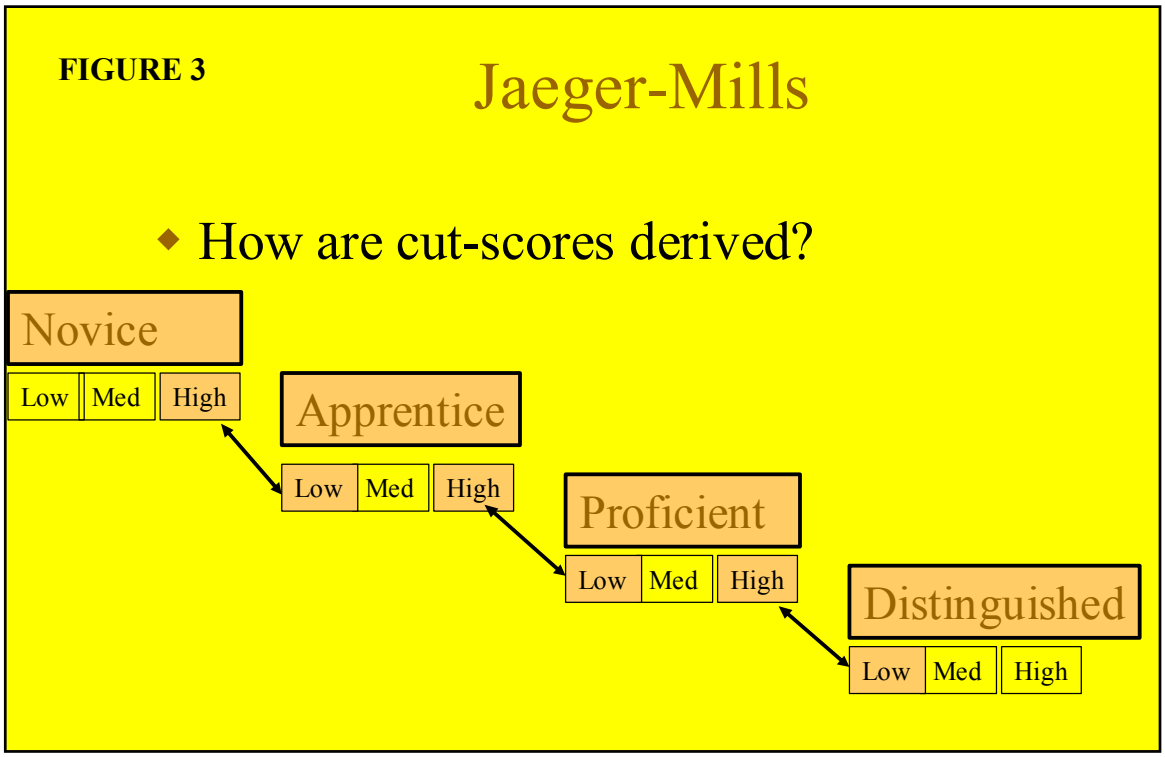
[11] Three forms of the Arts & Humanities and Practical Living / Vocational Studies assessments were used to increase the items represented in the review as was done for the CTB Bookmark Procedure.

[12] A list of participating teachers can be provided on request. The teacher reviews took place October 30-31, 2000 in Lexington.

FIGURE 3



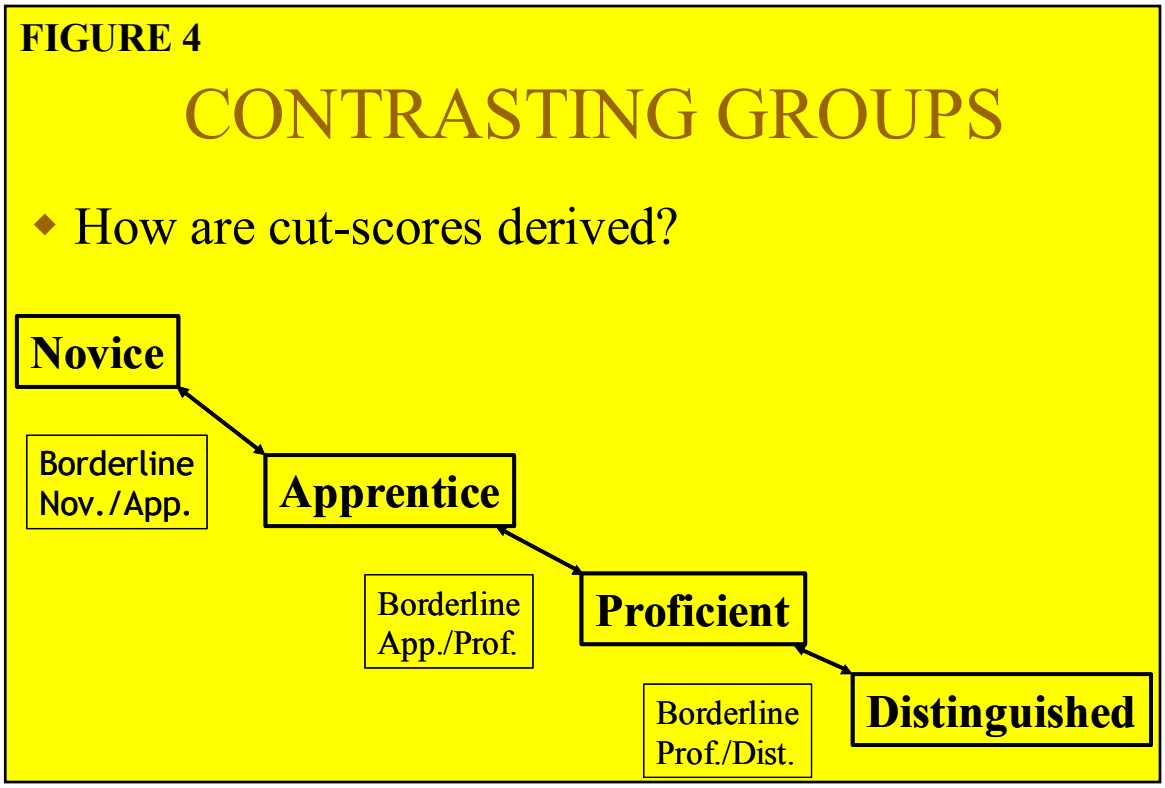
Step 4: Carry out a field-based empirical contrasting groups standard setting approach

Step 4 brought into consideration information that directly informs the cut-score setting process *contrasting* teacher observed classroom performance with student performance on each specific KCCT assessment. The procedure, known generically as a contrasting groups approach, asked teachers to review and study the Step 1 Draft Student Performance Level Descriptors and then, without reference to or knowledge of the student's actual performance on the Spring 2000 KCCT, but relying on their experience over the course of the year/semester with a student, identify the performance level of Novice, Apprentice, Proficient, or Distinguished to which the student belongs. Teachers could also classify students into borderline groups: Novice/Apprentice, Apprentice/Proficient, or Proficient/Distinguished. Teachers classified students for whom they were familiar with their content specific work. Figure 4 illustrates this approach.

The strength of this method is that it recognizes and relies on teachers' experience over the course of the year/semester with students and on teachers' professional judgment. The procedure results in cut-points that most accurately and systematically replicate teacher judgments. Limitations of this method include: no "formal" training for participants was offered as occurred in the other procedures, and teachers' judgment may have been shaped by eight years of experience with the old KIRIS cut-scores. (If past standards produced few Proficient/Distinguished performances, teachers may have categorized relatively few students in these levels based on past *normative* expectations. This may not have impacted the other two procedures similarly because the other two procedures allowed panelists to more directly connect the Draft Performance Level Descriptors to work on the assessment or items located on the assessments.)

This method involved approximately 1,000 teachers across the state and was implemented prior to the spring 2000 KCCT administration. Data from this procedure were sent directly to CTB and was not analyzed and made available to the Department or contractor staff working on the other two procedures until both the CTB Bookmark and Jaeger-Mills Procedures were completed. Teacher classroom-based judgments were merged with spring 2000 KCCT scale scores. Mean scores of the students placed in each of the four performance levels were analyzed to produce cut-points.

FIGURE 4



Number of Students on Which Teacher Judgments Were Made

CONTENT	ELEMENTARY SCHOOL	MIDDLE SCHOOL	HIGH SCHOOL
READING	999	1256	824
MATHEMATICS	1176	946	783
SCIENCE	940	993	847
SOCIAL STUDIES	1050	1041	840
ARTS & HUMANITIES	1037	1020	511
PRACTICAL LIVING / VOCATIONAL STUDIES	992	885	794

Step 5: Recommendations from the three (3) procedures are reviewed and considered by panels along with knowledge of Kentucky student performance on the spring 2000 CATS[13] administrations

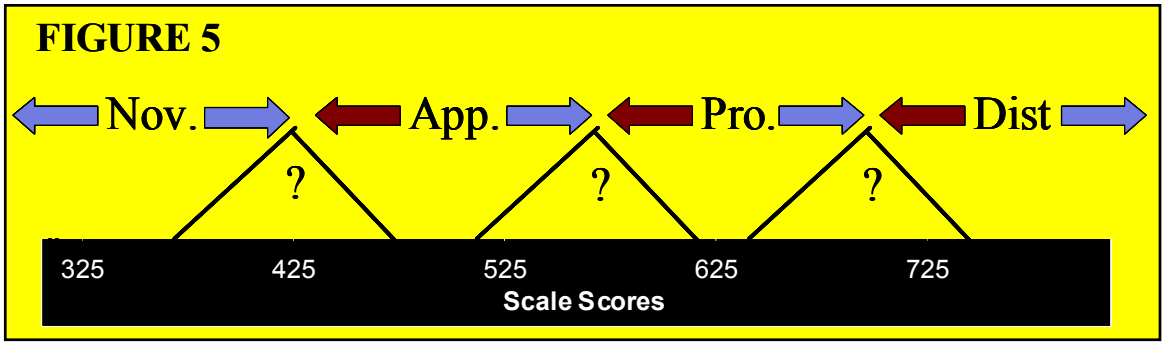
The task of the teacher panels in *Step 5* was to recommend 3 cut-scores in each content area at each grade level that best differentiate between Novice, Apprentice, Proficient, and Distinguished. The scale ranging from 325 to 800 was used to demonstrate the range of student work. (Figure 5)

Throughout the synthesis process, teachers were asked (and in fact did) to keep instructional considerations central to their recommendations, and to use the data at various stages to inform the process.

The CTB Bookmark, Jaeger-Mills, and contrasting groups procedures resulted in three independent sets of cut-scores. While each focused on a common task, the CTB Bookmark Procedure focused on the standards based on a review of the test items; the Jaeger-Mills Procedure focused on student work on the assessment; and the Contrasting Groups

[13] This is taken directly from the NTAPAA paper and actually refers to just the Kentucky Core Content Test component of the Commonwealth Accountability Testing System as opposed to the NRT or other components.

Procedure focused on student work in the classroom.



Recommendations from these three standard setting applications were examined and reviewed by teacher panels configured for each subject area and school level (i.e., elementary, middle, and high). Members of these panels were teachers who participated in one of the four prior procedures. The target structure for each teacher panel included one teacher who had participated in producing the draft descriptors in *Step 1*, two teachers from Contrasting Groups, two teachers from Jaeger-Mills, two teachers from CTB Bookmark, and one or two teachers from the adjacent level(s) (i.e., elementary, middle or high school).[14]

The three different methods (Steps 2-4) made very different assumptions regarding how to locate a cut-score. The collection of recommended cut-scores resulting from these methods informed the teacher panels for *Step 5* as to the reasonableness of the differing methods, offered guidance to teachers toward giving more or less weight to particular results and, in establishing a framework assisted teachers in the consideration of which information to attach the greatest reliance. This step did not simply average or somehow combine into a single index the results from the methods, rather, it led to an instructional and data-based framework from which recommendations to the Kentucky Board of Education could be formulated.

In addition to the results of the independent cut-score recommendations, also made available to the subject area teacher panels was information regarding how each set of recommendations *impacted* the distribution of students across the performance standards (N/A/P/D) based on the Spring 2000 KCCT results. Access to these results was an important provision of the process in that it was designed to provide a "reality check" toward assisting teachers in establishing their recommendations. Data from the Spring 2000 KCCT were configured in differing arrangements to compare the methods across content at the elementary, middle, and high school levels (horizontally), and within content across levels of school (vertically) to inform the discussion of the panels. In this way, the decisions for cut-points were informed by actual performance of Kentucky students.

Step 6 Recommendations for cut-scores are studied by the Kentucky State Board of Education and evaluated against NAEP, TIMSS[15] and KIRIS performance standards and expectations

The final recommendations of the panels are to be evaluated by the Board in relation to the performance levels established in other large scale and often comparable programs. The intention is to appraise the extent to which Kentucky's potential cut-scores, in areas as mathematics, reading, science and writing when comparable grades are tested, measure-up against other programs. As there is no way to legitimately compare whether performance expectations have "changed" from the past (recall CATS is a different program and as such a direct comparison is not possible), we can generally ask, where are the recommended cut-score levels on the CATS score scale by comparison

[14] While Steps 2 and 3 were based on relatively large teacher committees and were inclusive of teachers of students with disabilities, Step 5 committees were smaller and this representation was not assured. For this reason, the Department assigned two special education staff as resources available upon request to any of the teacher committees.

[15] There are no specific performance standards associated with this particular assessment. At times, the NAEP standards are over-laid on this data.

to other programs? Such data, mapping of performance standards and patterns can inform policy makers as to the credibility and consequences associated with these new initiatives for assessment and accountability in Kentucky.[16]

[16] Attachment C summarizes performance standards distribution resulting from the National Assessment of Educational Progress (NAEP). NAEP data are not intended to provide *targets* for Kentucky, but to serve as a reference.

EXECUTIVE SUMMARY OF FINDINGS

As noted on the first page of the NTAPAA paper describing Kentucky's standards setting procedure: "A *Performance Standard* is a statement of expectation describing the knowledge, skill and capacity of the individual that becomes associated with a specific categorization or labeling (e.g., novice, apprentice, proficient, and distinguished). …"

The standards being recommended to the Kentucky Board of Education provide a ***description of knowledge, skill and capacity associated with each performance level***: Novice, Apprentice, Proficient, and Distinguished. Kentucky teachers drafted a set of student performance level descriptors to guide three independent standards setting procedures involving approximately 1,600 Kentucky teachers. A subset of these teachers (133 drawn from the first four steps) met to consider the results of these procedures, the instructional implications, the impact on the data driving the Kentucky school accountability system, and the refinements to the draft performance level descriptors needed to align a final recommended set of standards and associated cut-points with the current assessment.

CAUTIONS: While the cut-points applied in the Kentucky Instructional Results Information System (KIRIS) and the recommended cut-points resulting from Step 5 under the Commonwealth Accountability Testing System (CATS) are not directly comparable, a necessary and important conversation was held with teachers that assisted them in understanding the transition between the two and seeing the differences between estimated indices applying recommendations from Step 5 and current indices based on KIRIS cut-points.[17] There are strong reasons reviewed with NTAPAA not to make such comparisons. However, given that the task at hand in the last two sessions of the Step 5 Procedure was to review the Step 5 recommendations in total, there was a sense that part of the total environment in which this review took place was to understand how the Interim Accountability data and other historical data with which some were familiar would interact with the new recommendations based on the application of the Step 5 recommended cut-points to the spring 2000 data. These comparisons are not recounted here because in retrospect, there may be a more effective way of thinking about how this understanding could have been presented. The comparisons of Interim Accountability Indices which were based on calculations using *loosely carried forward KIRIS cut-points* applied to the new KCCT were not a reasonable comparison to indices based on the new KCCT applying standards and their associated cut-point that were derived directly from the KCCT. Teachers involved in the standards setting process were going to have to confront this inappropriate comparison. At least these points are important to note and were shared with teachers.

1. KIRIS Standards were based on the use of only one standards setting method (a modification of the Angoff Procedure).
2. KIRIS Standards were established in 1992 and 1993 with a limited number of teachers involved in each content area.
3. Limitations of the KIRIS Process included the lack of opportunity for teachers to experience and consider both horizontal and vertical communication in each content area and grade.
4. Lack of Descriptors for KIRIS Standards resulted in standards that were not well communicated and/or understood. This lack of definition makes it impossible to meaningfully relate or compare the old N/A/P/D cut-points to the ones being recommended.
5. Due to major changes in the assessment program and limited procedures applied in 1992, "old" and "new" standards CANNOT be compared.
6. The changes cited by NTAPAA and restated in the beginning of this document further clarify the non-comparability of these data.
7. Relevance and importance of the New Standards cannot be overly stated. The final standards will impact instruction and ultimately getting to proficient in 2014.

Despite these cautions, it is as difficult to ignore questions about how KIRIS and KCCT standards have changed as it is to address the question. There are no comparable N/A/P/D performance level descriptors associated with the 1992 and 1993 KIRIS standards that can be compared to those associated with the recommendations included in this document. However, the 1992 and 1993 KIRIS standards were appropriately applied to the last administration of the KIRIS in the spring of 1998, and the recommended KCCT standards can be appropriately applied to the KCCT data resulting from the spring 2000 administration.

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[17] Note: Any differences in data used for discussion in Step 5 and data presented here are due to data for Step 5 being drawn from files including some students not included in the formal accountability calculations: e.g., foreign exchange student. Data presented in this Staff Note are inclusive of students on which spring 2000 interim accountability was based.

- It is appropriate to consider the 1998 N/A/P/D data distribution from the 1998 KIRIS administration applying the 1992 and 1993 KIRIS standards.
- It is appropriate to consider the 2000 N/A/P/D data distribution from the 2000 KCCT administration applying the Step 5 recommended cut-points.
- **It is not appropriate to compare N/A/P/D data distributions from the spring 2000 KCCT administration applying the *loosely carried forward KIRIS cut-points* to N/A/P/D data distributions from the spring 2000 KCCT administration applying the Step 5 recommended cut-points or any distributions that may result from Kentucky Board of Education adjustments to these recommendations.**

At least these considerations must be kept in mind when comparing 1998 distributions of data to 2000 distributions.

- Instruction ***may*** have changed from 1998 to 2000.
- Student achievement levels ***may*** have changed from 1998 to 2000.
- The assessment administered in 1998 and the one administered in 2000 ***did*** change.
- The 1998 and 2000 data ***are*** based on different cohorts of students.
- **The standards applied to the 1998 and 2000 assessments did change.**

With these cautions in mind, Tables 1 – 6 contain summaries of the percent of students scoring at each performance level: 1998 KIRIS data and 2000 KCCT data applying the Step 5 Procedure recommendations.

Table 1: Reading - Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRiS Data

READING

KCCT Spring 2000 Applying Step 5 Recommendations
(Percent Scoring at Each Performance Level)

	Elem. School	Mid. School	High School
Novice	17	15	18
Apprentice	26	34	55
Proficient	52	45	21
Distinguish	5	6	7
(Total)	100	100	101

KIRIS 1998

	Elem. School	Mid. School	High School
Novice	5	6	16
Apprentice	63	78	56
Proficient	31	15	26
Distinguish	2	0	2
(Total)	101	99	100

Table 2: Mathematics - Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRIS Data

MATHEMATICS			
	KCCT Spring 2000 Applying Step 5 Recommendations (Percent Scoring at Each Performance Level)		
	Elem. School	Mid. School	High School
Novice	39	35	42
Apprentice	30	40	31
Proficient	27	20	19
Distinguish	5	6	7
(Total)	101	101	99
	KIRIS 1998		
	Elem. School	Mid. School	High School
Novice	28	34	32
Apprentice	53	34	42
Proficient	11	16	17
Distinguish	9	15	10
(Total)	101	99	101

Table 3: Science - Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRIS Data

SCIENCE			
	KCCT Spring 2000 Applying Step 5 Recommendations (Percent Scoring at Each Performance Level)		
	Elem. School	Mid. School	High School
Novice	14	33	31
Apprentice	50	39	42
Proficient	30	21	25
Distinguish	5	7	2
(Total)	99	100	100
	KIRIS 1998		
	Elem. School	Mid. School	High School
Novice	20	47	8
Apprentice	71	52	80
Proficient	8	1	12
Distinguish	0	0	1
(Total)	99	100	101

Table 4: Social Studies -Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRIS Data

SOCIAL STUDIES			
	KCCT Spring 2000 Applying Step 5 Recommendations (Percent Scoring at Each Performance Level)		
	Elem. School	Mid. School	High School
Novice	35	25	23
Apprentice	26	47	53
Proficient	32	24	18
Distinguish	7	5	6
(Total)	100	101	100
	KIRIS 1998		
	Elem. School	Mid. School	High School
Novice	29	35	24
Apprentice	55	54	47
Proficient	14	11	25
Distinguish	1	1	4
(Total)	99	101	100

Table 5: Arts & Humanities – Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRIS Data

ARTS & HUMANITIES			
	KCCT Spring 2000 Applying Step 5 Recommendations (Percent Scoring at Each Performance Level)		
	Elem. School	Mid. School	High School
Novice	48	28	39
Apprentice	38	36	42
Proficient	10	31	14
Distinguish	4	4	5
(Total)	100	99	100
	KIRIS 1998		
	Elem. School	Mid. School	High School
Novice	68	53	52
Apprentice	29	40	44
Proficient	1	4	2
Distinguish	2	2	2
(Total)	100	99	100

Table 6: Practical Living / Vocational Studies – Spring 2000 KCCT Data Applying Step 5 Recommendations & 1998 KIRIS Data

PL/VS	KCCT Spring 2000 Applying Step 5 Recommendations (Percent Scoring at Each Performance Level)		
	Elem. School	Mid. School	High School
Novice	24	25	20
Apprentice	30	40	32
Proficient	37	26	39
Distinguish	9	10	10
(Total)	100	101	101
	KIRIS 1998		
	Elem. School	Mid. School	High School
Novice	38	63	54
Apprentice	56	30	39
Proficient	5	5	4
Distinguish	1	2	2
(Total)	100	100	99

In reading, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions were largest at the elementary and middle school levels in the Apprentice and Proficient levels. The elementary and middle school percent apprentice was reduced while the proficient performance percent increased. Changes in the high school distribution were very small.

In mathematics, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions were more noticeable at the elementary and high school levels. The middle school distributions were the most stable.

In science, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions there were noticeable differences at all three levels: elementary, middle, and high school. At the elementary and middle from 1998 to 2000, there was a shift in the distribution from Novice and Apprentice to Proficient and Distinguished. The shift at the high school is more difficult to describe. The percent Novice increased from 8% to 31% while the Proficient percent increased from 12% to 25%. The high school Distinguished percent remained stable.

In social studies, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions were more noticeable at the elementary level while the high school remained fairly constant. At the elementary level, the percent locating in the Novice range increased while there was movement from the Apprentice to the Proficient level.

In arts & humanities, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions were most noticeable at the Novice level at the elementary, middle, and high school levels. At the elementary level, there were increases in both the Apprentice and Proficient levels. At the middle and high school levels, the increases were most evident at the Proficient level.

In practical living / vocational studies, the differences between the 1998 KIRIS and 2000 Step 5 adjusted KCCT distributions were evident at the Novice level at the elementary, middle, and high school levels. There was a large increase in the percent Proficient at the elementary and high school levels levels. At the middle school level, there were increases in both the Apprentice and Proficient levels. The increase in Distinguished performance was most noticeable in this content area.

Focusing on the Step 5 recommendations applied to spring 2000 KCCT data and the vertical relationship (elementary, middle, and high school within a content area), the reading distributions are relatively similar at the Novice and Distinguished levels.

The high school results in a higher percent performing in the Apprentice range with the elementary school having more in the proficient range. In mathematics, the distributions were rather similar with the largest difference being in the Apprentice range: 30% Apprentice at the elementary level, and 40% at the middle school. The science distributions show the largest difference at the Novice level: 14% Novice at the elementary and 31% Novice at the high school level. In social studies, the elementary distribution contains the largest Novice proportion of students as does the Proficient range: 35% Novice and 32% Proficient. In arts & humanities, the largest concentration of Novice was at the elementary level, while the largest concentration of Proficient was at the middle school. The practical living / vocational studies distributions were reasonably similar although the elementary and high school levels had a noticeably higher percentage of proficient students than did the middle school.

While these differences across content areas at the elementary, middle, and high school levels and vertically within a content area in spring 2000 distributions are of interest, it is important to note that during the Step 5 Synthesis Procedure, teachers had an opportunity to discuss these differences from both an instructional prospective and a data prospective. These opportunities occurred both across content at a grade level and vertically across grade levels within a content. With these interactions, teachers chose to recommend these cut-points based on instructional consideration resulting in these distributions.

ACCOUNTABILITY INDEX IMPACT

The academic components of accountability indices are calculated by assigning a value of: zero to nonperforming students; 13 to students scoring in the middle range of Novice performance; 26 to the high Novice range; 40 to the low Apprentice range; 60 to the mid Apprentice range; 80 to the high Apprentice range; 100 to the Proficient range;, and 140 to the Distinguished range.[18] These values are averaged within a content area.

Table 7 describes the ranges of content specific academic indices that would result from each of the three procedures and the index that would result if the Kentucky Board of Education accepts the recommendations presented here. These data are based on the spring 2000 performance of students on the Kentucky Core Content Test.

> (The NRT and alternate portfolio data components have not been merged with these estimates REPORTED IN Table 7, but are accounted for in Table 8. The nonacademic and writing data have been included in the Table 1 estimates. The inclusion of the Alternate Portfolio data in Table 2 accounts for the small differences in the 2000 indices.)

At the elementary level, if one were to consistently accept the recommended cut-points resulting from the Jaeger-Mills Procedure, the spring 2000 accountability index would be approximately 51.8;. for the Contrasting Groups Procedure, approximately 62.2; for the CTB Bookmark Procedure, approximately 69.5. The points recommended through the Step 5 Procedure would result in a spring 2000 accountability index of approximately 67.7.

At the middle school lefel, if one were to consistently accept the recommended cut-points resulting from the Jaeger-Mills Procedure, the spring 2000 accountability index would be approximately 52.7; for the Contrasting Groups Procedure, approximately 59.3; for the CTB Bookmark Procedure, approximately 69.2. The points recommended through the Step 5 Procedure would result in a spring 2000 accountability index of approximately 65.2.

At the high school level, if one were to consistently accept the recommended cut-points resulting from the Jaeger-Mills Procedure, the spring 2000 accountability index would be approximately 50.2; for the Contrasting Groups Procedure, approximately 61.7; for the CTB Bookmark Procedure, approximately 62.4. The points recommended through the Step 5 Procedure would result in a spring 2000 accountability index of approximately 64.4. Note this value is higher than that of any of the three procedures mainly because of the resulting higher percentages of students in Reading and Practical Living/Vocational Studies identified in Step 5 as High Apprentice, Proficient, and Distinguished. The cut-points for Novice/Apprentice, Apprentice/Proficient, and Proficient/Distinguished recommended through the Step 5 Procedure were always within the range established by the CTB Bookmark, Jaeger-Mills, and Contrasting Groups Procedures.

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[18] Students not responding to the assessment are defined as nonperforming. The middle 1/3 of the Novice range in scale score units is defined as *middle* Novice, the high 1/3 of the Novice range in scale score units as *high* Novice, the low 1/3 of the Apprentice range in scale score units as *low* Apprentice, the middle 1/3 of the Apprentice range in scale score units as *middle* Apprentice, and the high 1/3 of the Apprentice range in scale score units as *high* Apprentice.

Table 7 contrasts in the accountability index metric (0-140) the recommendations resulting from each of the three procedures and from the Step 5 Synthesis phase. Table 8 summarizes the impact of the proposed standards on the *Long-Term* accountability baseline data (spring 1999 and Spring 2000).

TABLE 7:[19] Summary of Estimated Indices Based on Proposed Standards -- Spring 2000 Data
Comparison of Three Procedures and Step 5 Recommendations

	SPRING 2000 ESTIMATED INDICES			
ELEMENTARY	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Reading	80.0	54.1	64.0	80.0
Mathematics	62.6	54.5	64.3	60.4
Science	71.5	44.9	60.1	73.0 *
Social Studies	73.7	38.3	62.7	67.0
Arts & Humanities	46.5	41.6	52.0	43.8
Prac.Living/Voc.Studies	80.3	52.1	51.6	70.0
Writing				
Nonacademic Index				
Accountability Index	69.5	51.8	62.2	67.7
MIDDLE	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Reading	81.5	50.1	56.9	78.4
Mathematics	55.7	49.8	64.5	59.9
Science	76.8	46.8	58.8	62.3
Social Studies	69.8	48.9	56.0	64.1
Arts & Humanities	74.4	47.5	50.8	62.6
Prac.Living/Voc.Studies	69.4	53.5	56.6	66.1
Writing				
Nonacademic Index				
Accountability Index	69.2	52.7	59.3	65.2
HIGH SCHOOL	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Reading	65.8	46.4	59.1	67.7 *
Mathematics	47.1	41.1	57.7	57.2
Science	57.2	34.2	62.2	60.5
Social Studies	63.5	48.3	58.3	63.5
Arts & Humanities	55.7	41.8	52.3	51.3
Prac.Living/Voc.Studies	73.4	51.3	59.5	73.5 *
Writing				
Nonacademic Index				
Accountability Index	62.4	50.2	61.7	64.4 *

* Index is outside of expected range because of distribution of high apprentice, proficient, and distinguished

[19] There are small differences in the spring 2000 indices reported in Table 7 and Table 8 which are due to the exclusion of the impact of Alternate Portfolio data in Table 7. Alternate Portfolio data are included in Table 8.

TABLE 8:[20] Summary of Estimated Indices Based on Proposed Standards on 1999 and 2000 Combined Data

Elementary	Step 5 1999	Step 5 2000	Step 5 Combined 1999 & 2000
Reading	78.9	79.9	
Math	57.7	60.5	
Science	70.2	73.0	
Social Studies	66.3	67.0	
Arts & Humanities	41.3	44.0	
PL/VS	69.7	70.0	
Writing	52.0	54.2	
Non-Academic	95.9	95.7	
Academic Index	64.4	66.2	
Accountability Index	65.9	67.7	66.8
NRT Index	76.5	81.0	
Accountability Index plus NRT	66.4	68.4	67.4

Middle School	Step 5 1999	Step 5 2000	Step 5 Combined 1999 & 2000
Reading	78.1	78.3	
Math	56.9	59.9	
Science	61.5	62.3	
Social Studies	60.9	64.1	
Arts & Humanities	57.2	62.6	
PL/VS	66.5	66.1	
Writing	39.2	41.1	
Non-Academic	96.7	96.6	
Academic Index	59.7	61.7	
Accountability Index	63.4	65.2	64.3
NRT Index	75.1	77.2	
Accountability Index plus NRT	64.0	65.8	64.9

High School	Step 5 1999	Step 5 2000	Step 5 Combined 1999 & 2000
Reading	63.6	67.7	
Math	56.1	57.2	
Science	59.1	60.5	
Social Studies	62.3	63.5	
Arts & Humanities	48.1	51.4	
PL/VS	71.4	73.5	
Writing	56.1	55.2	
Non-Academic	94.2	94.5	
Academic Index	59.5	61.1	
Accountability Index	63.0	64.4	63.7
NRT Index	70.7	72.8	
Accountability Index plus NRT	63.4	64.8	64.1

[20] There are small differences in the spring 2000 indices reported in Table 7 and Table 8 which are due to the exclusion of the impact of Alternate Portfolio data in Table 7. Alternate Portfolio data are included in Table 8.

TABLE 9: SUMMARY OF N/A/P/D CUT-POINTS IN KCCT SCALE SCORE UNITS[21]

READING

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
Nov M/H	451	426	411
NOV/APP	514	477	454
App L/M	523	488	482
App M/H	532	500	509
APP/PRO	541	511	537
PRO/DIS	601	561	584

MATHEMATICS

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
Nov M/H	472	454	457
NOV/APP	546	518	523
App L/M	556	530	535
App M/H	565	543	546
APP/PRO	575	555	558
PRO/DIS	619	584	592

SCIENCE

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
Nov M/H	450	434	458
NOV/APP	512	489	525
App L/M	526	498	537
App M/H	540	508	550
APP/PRO	554	517	562
PRO/DIS	588	540	608

SOCIAL STUDIES

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
Nov M/H	458	430	446
NOV/APP	524	482	506
App L/M	531	499	530
App M/H	539	516	553
APP/PRO	546	533	577
PRO/DIS	586	580	621

ARTS & HUMANITIES

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
NOV/APP	503	478	491
APP/PRO	575	529	554
PRO/DIS	631	610	598

PRACTICAL LIVING / VOCATIONAL STUDIES

Sub Performance Standard Cut-Scores	Step 5 Elem. School	Step 5 Mid. School	Step 5 High School
Nov L/M	325	325	325
NOV/APP	460	466	458
APP/PRO	507	520	506
PRO/DIS	588	570	578

Figures 6, 7, and 8 summarize the impact of the Step 5 recommended cut-points across content areas at the elementary, middle, and high school levels. The top two segments of the *stacked bars* in these figures allow a quick review of the percents of students who would perform at Proficient and Distinguished levels if the Step 5 recommendations were to be applied to the spring 2000 Kentucky Core Content Test data. At the elementary and middle school levels, reading produces the highest percent of combined Proficient and Distinguished performance. Practical living/vocational studies produces the highest percent of combined Proficient and Distinguished performance at the high school level. Figures 9 through 14 present the same data except in a vertical direction within each content area. Figure 9, for example, compares elementary, middle, and high school reading.

[21] Sub Performance Level refers to: Novice Low/Medium; Novice Medium/High; Apprentice …

Figure 6: Novice, Apprentice, Proficient, and Distinguished Distributions – Elementary School

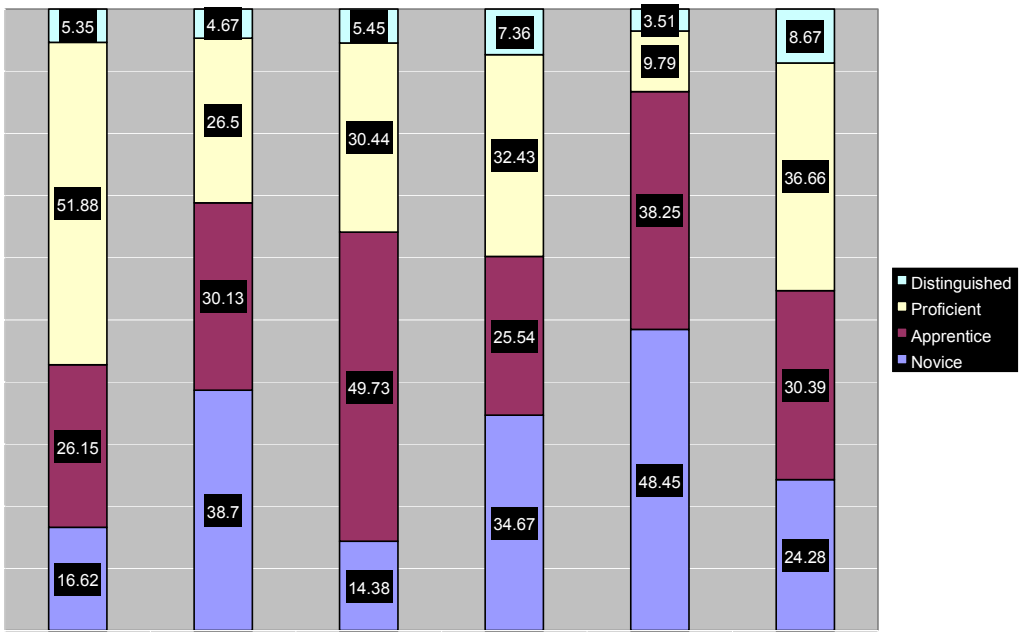


Figure 7: Novice, Apprentice, Proficient, and Distinguished Distributions – Middle School

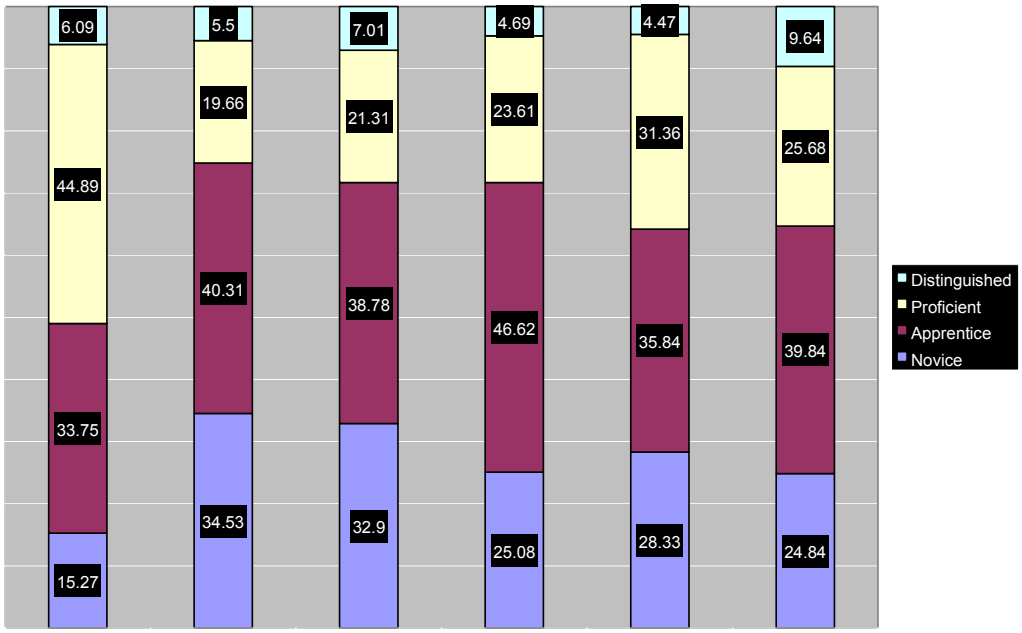


Figure 8: Novice, Apprentice, Proficient, and Distinguished Distributions – High School

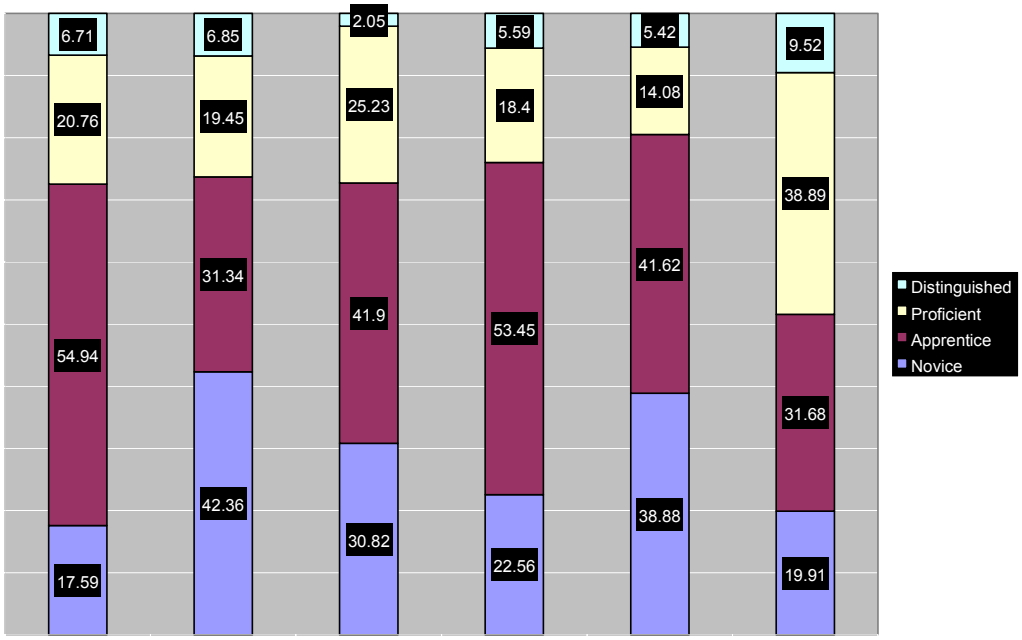


Figure 9: Novice, Apprentice, Proficient, and Distinguished Distributions – Reading

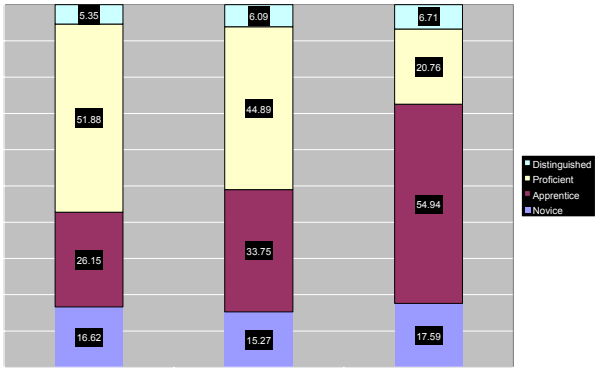


Figure 10: Novice, Apprentice, Proficient, and Distinguished Distributions – Mathematics

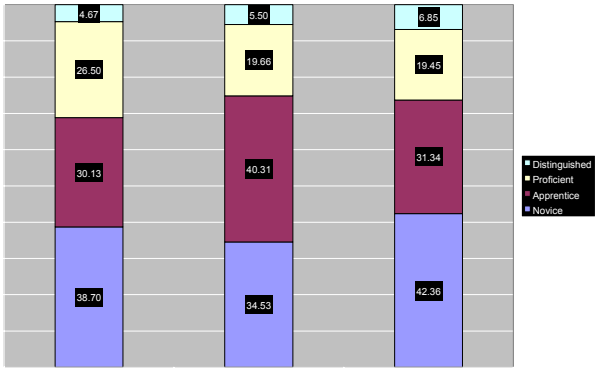


Figure 11: Novice, Apprentice, Proficient, and Distinguished Distributions – Science

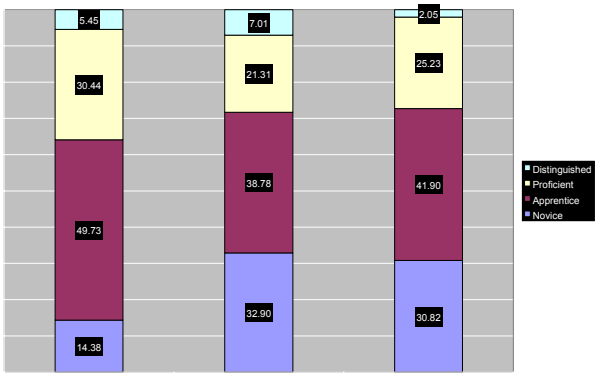


Figure 12: Novice, Apprentice, Proficient, and Distinguished Distributions – Social Studies

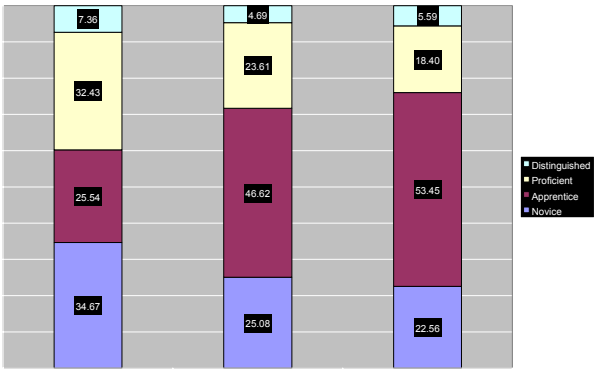


Figure 13: Novice, Apprentice, Proficient, and Distinguished Distributions – Arts & Humanities

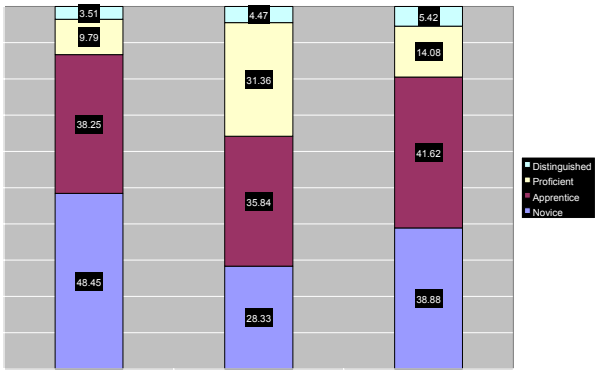
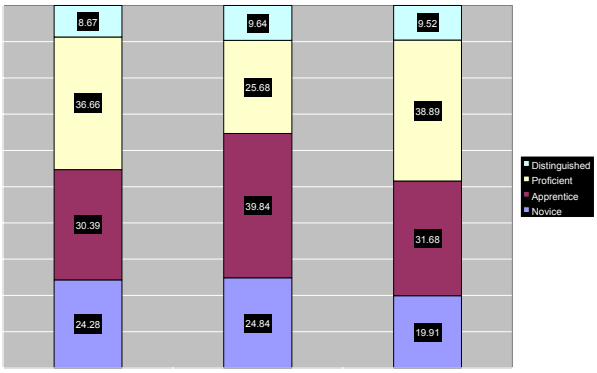


Figure 14: Novice, Apprentice, Proficient, and Distinguished Distributions – Practical Living / Vocational Studies



Accountability / Academic Index Calculations: The scale score metric is the unit on which cut-points between the Novice, Apprentice, Proficient, and Distinguished performance standards are set. However, it is the percent of students falling in each of these performance standards that is the basis of accountability index calculations in Kentucky. At the Novice and Apprentice levels, these distributions are further subdivided into additional categories. Novice is subdivided into: non-performance, middle Novice, and high Novice. The Apprentice level is subdivided into: low Apprentice, middle apprentice, and high apprentice. Because Proficient and Distinguished represent performance that is at or above the state expectations these distributions are not further subdivided. The Novice and Apprentice ranges were subdivided for reasons particular to the Kentucky school accountability process. Performance within these standards represented a rather large range of student achievement, and as schools strived to reach growth expectations established by regulation, there needed to be a way to make the indices sensitive to movement of students toward the state expectations of proficient performance. These weights are used in calculating indices within each content area.

Nonperformance	0
Middle Novice	13
High Novice	26
Low Apprentice	40
Middle Apprentice	60
High Apprentice	80
Proficient	100
Distinguished	140

Kentucky's Alternate Portfolio data are folded into these calculations such that each student participating in the Alternate Portfolio has the same impact as do other students on index calculations.

STEP 5 DETAILED FINDINGS

OVERVIEW & STRUCTURE:

The Step 5 Phase was structured to draw on a subset of the teachers participating in each of the first four steps. While the original NTAPAA paper suggested that this step might involve a wider representation, advice obtained in further conversation with NTAPAA particularly in September and December of 2000 suggested that the synthesis step would be most efficiently implemented if participants were *experienced* in the process and representing views developed from participation in these previous steps. The consensus was that wider audiences would have a more appropriate point to comment in the reviews anticipated by the School Curriculum, Assessment, and Accountability Council, the Education Assessment and Accountability Review Subcommittee, and the Kentucky Board of Education. Step 5 participation was targeted as listed below. As has been the practice throughout, priorities were on regional/ethnic balance. As the deadlines for participation approached, compromises to the targets below were made to assure to the degree possible that there were eight teachers per content area per grade level. It turned out to be most difficult to fill the Contrasting Group representatives. When it was not possible to fill the Contrasting Groups cells, the balance between Jaeger-Mills and CTB Bookmark representatives was maintained. While it was not possible to secure 8 teachers in each content/grade committee, there were at least 6 participants in each. The Step 5 Synthesis panelists came to the process from four different perspectives and brought those perspectives to the synthesis process. These perspectives blended quickly as the panels began the process of reviewing the work of the previous steps, and members drew freely on the experiences of the others. There was no evidence that there was any vested interests in any previous procedure, but a focus on instructional issues and the data impact of those instructional considerations.

TARGET STEP 5 PARTICIPANTS

- Draft Descriptors – 1 Teacher
- Contrasting Groups – 2 Teachers
- Jaeger-Mills – 2 Teachers
- CTB Bookmark – 2 Teachers
- Adjacent Level – 1 or 2 Teachers

The adjacent level component is an important feature of the panels in that it placed a middle school teacher on the appropriate elementary content committee, an elementary and high school representative on the middle school committees, and a middle school representative on the high school committees. Within a content area (e.g., science), it is critical that there be a vertical understanding of the standards: 4th grade science standards must be relevant to the 7th grade science standards, which must be relevant to the 11th grade science standards. Based on the Kentucky experiences since 1992, the Step 5 design could not leave this vertical conversation to chance or in any way minimize its importance. Placing an adjacent level teacher(s) on each committee was intended to assure that elementary staff had access to a middle school perspective throughout the process, that middle school staff had similar access to elementary and high school perspectives, and that high school staff had access to the middle school perspective.

The structure of the Step 5 Procedure agenda is important in helping to understand how teachers were asked to organize the recommendations resulting from the first four steps. The initial session was designed to assure that all Step 5 participants were comfortable with each of the other standards setting steps. In addition, *vocabulary* applicable to standards setting activities, which is critical to the process, was explained and discussed. Session 2 of the procedure was designed to allow each of the content/grade committees (18 committees) to consider the recommendations of the steps 2-4 procedures from an instructional perspective: analyze the consistency of each set of recommended cut-points with their perspective of proficient work. The Step 1 draft descriptors were central to this phase. In this activity, the committees had a perspective of which procedure was recommending *higher or lower* cut-points, but the activity was carried out in the absence of *impact* data or the percent of students that might be classified as Novice, Apprentice, Proficient, and Distinguished.

SUMMARY OF SYNTHESIS PROCEDURE

INTRODUCTION / OVERVIEW

Review of All Procedures, Methodologies, and Vocabulary

CONTENT / GRADE COMMITTEE WORK (18 Separate Committees)

First, the committees reviewed instructional consequences of each set of standards recommendations:
CTB Bookmark, Jaeger-Mills, & Contrasting Groups Procedures.
(Scale Score Cut-Points were available at this point in the process)

Based on instructional issues, an initial recommendation was formed.

Impact Data was then introduced. For the purpose of deciding if the initial recommendation should be moderated.

ELEMENTARY / MIDDLE / HIGH SCHOOL COMMITTEE WORK (3 Separate Committees)

To facilitate horizontal across content discussion, reading, mathematics, science, social studies, arts & humanities, and practical living / vocational studies panelists were organized into three committees: elementary, middle, and high school.

The three committees discussed across the curriculum, instructional rationale for there recommendation, and the impact on the N/A/P/D data distributions.

The 18 content / grade committees reconvened to consider their recommendations.

CONTENT SPECIFIC VERTICAL COMMITTEE WORK (6 Separate Committees)

To facilitate vertical within content discussion, reading, mathematics, science, social studies, arts & humanities, and practical living / vocational studies panelists were organized into six committees by content area.

The six committees discussed ***vertically*** within specific content curriculum, instructional rationale for their recommendation, and the impact on the N/A/P/D data distributions.

The 18 content / grade committees reconvened to consider their recommendations.

These were the final recommendations submitted to the Kentucky Board of Education.

Teachers were asked to *focus* on a method (CTB Bookmark, Jaeger-Mills, or Contrasting Groups) that was most consistent with the group's instructional expectations. To do this, the committees were asked to first consider the range of performance that would be characteristic of proficient work from each method by studying instructional summaries written from each procedure (Attachment B), and then consider the apprentice, novice, and distinguished ranges. This was intended to provide an instructional structure for considering each of the sets of cut-points recommended by each procedure (Steps 2-4). Teachers were then asked to consider whether they would recommend adjusting any or all of the cut-points (Novice/Apprentice, Apprentice/Proficient, Proficient/Distinguished) and provide an instructional rationale for any recommended adjustments.

In Step 5 – Session 2, teachers were given CTB Bookmark, Jaeger-Mills, and Contrasting Groups cut-points in *scale score* units because this was necessary in order for them to make use of the instructional summaries prepared by Department staff, the order-item booklet used in the CTB Bookmark Procedure, and the student responses drawn from the Jaeger-Mills Procedure. However, in this initial *working* session, teacher panelists were asked to focus on instructional considerations as they looked at the differences in the recommendations resulting from each of the three procedures.

From this point teachers in each of the 18 committees (six content areas at three levels of schooling) were asked to evaluate impact[22] data by content area and grade level, select the method that most closely expressed the group's recommendations, and if appropriate, modify recommendations based on data from other methods, and thoroughly discuss the instructional considerations of the recommended cut-points. Teacher panels worked with the instructional summaries initially, but had total access to the materials used to prepare those summaries.

When this task was completed, teachers met with other content area groups at the same grade level (i.e., for ***horizontal*** communication) to present recommended cut-points and impact data and to ask questions and discuss rationales. Teachers then returned to their original content area groups to discuss the results of the presentations and suggest modifications, if appropriate.
Vertical communication was facilitated when teachers met in six content groups including all grade levels to present and discuss cut-scores and impact data. Teachers then returned to their content area and grade level groups for the final time to make any appropriate modifications.

While the cut-points applied in the Kentucky Instructional Results Information System (KIRIS) and the recommended cut-points resulting from Step 5 under the Commonwealth Accountability Testing System (CATS) are not directly comparable, a necessary and important conversation was held with teachers that assisted them in understanding the transition between the two and seeing the differences between estimated indices applying recommendations from Step 5 and interim indices based on KIRIS cut-points.[23] At least seven points are important to note and were shared with teachers.

1. KIRIS Standards were based on the use of only one standards setting method.
2. KIRIS Standards were established in 1992 and 1993 with a limited number of teachers involved in each content area.
3. Limitations of the KIRIS Process included the lack of opportunity for teachers to experience and consider both horizontal and vertical communication in each content area and grade.
4. Lack of Descriptors for KIRIS Standards resulted in standards that were not well communicated and/or understood. This lack of definition makes it impossible to meaningfully relate or compare the old N/A/P/D cut-points to the ones being recommended.
5. Due to major changes in the assessment program and limited procedures applied in 1992, "old" and "new" standards CANNOT be compared.
6. The changes cited by NTAPAA and restated in the beginning of this document further clarify the non-comparability of these data.
7. Relevance and importance of the New Standards cannot be overly stated. The final standards will impact instruction and ultimately getting to proficient in 2014.

The objective of the last session of Step 5 was for teachers to reflect on their final recommendations considering the instructional and data implications. The final activity teachers were asked to engage in was to draft a brief statement to the Kentucky Board of Education addressing the degree of comfort felt with the process; the degree of confidence in the standards recommended; any concerns (instructional, data, or other) the Board should consider; any additional recommendations concerning standards or adjustments to the recommendations, draft descriptors, or the assessment; and any follow-up activities that should be taken.

In formulating recommendations to the Kentucky Board of Education, teacher panelists were asked to ***set aside*** issues regarding past data on the administration of the KIRIS or issues that may have resulted in the Interim Accountability phase in Kentucky. Through the point in the synthesis of the three sets of standards recommendations, there were no discussions of these historical concerns. However, when teacher panelists were asked to comment on the total standards setting process, and in particular, the synthesis step, it seemed most reasonable to accommodate these concerns. At this point, panelists were being asked to ***reflect*** on the process and the comfort they felt with their recommendations and no changes to these recommendations were considered or discussed.

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[22] Impact data refers to the distribution (percent) of students scoring at each performance level: Novice, Apprentice, Proficient, and Distinguished.

[23] Note: Any differences in data used for discussion in Step 5 and data presented here are due to data for Step 5 being drawn from files including some students not included in the formal accountability calculations: e.g., foreign exchange student. Data presented here are inclusive of students on which spring 2000 interim accountability was based.

Despite the inappropriateness of comparisons between interim accountability data and the recommendations being forwarded to the Board, these data were presented and discussed prior to asking teachers to formulate their reflections on the process to be shared with the Board. In retrospect, it may have been more appropriate to have presented data distributions from the last administration of KIRIS (1998). However, the notable result is that when presented with the data and the factors making these data comparisons inappropriate, teachers went back to the instructional basis for their recommendations, and made no mention of historical data concerns in their reflections. There was no evidence that historical data caused teachers to want to ***rethink*** the recommendations reflected in this document.

Despite the difficulties with these data issues, it was most appropriate to work through these matters with the Step 5 Teacher Panelists before asking them to evaluate or reflect on the synthesis process and resulting recommendations. It would have been most inappropriate to ask teachers to give of their time and expertise, and to face these difficult issues individually after going home, and possibly wondering if they should have made these concerns a part of their final comment to the Board.

CONTENT AREA SPECIFICS AND DATA

The following pages provide content area specifics with pertinent data displayed in accompanying graphs. The layout of this information is the same for each content area and includes the following.

- Recommended *performance level descriptors* (Attachment I)
- *Reflections from the last session of step 5*
- *Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method and Step 5 Recommendation* (Attachment J)
- *Impact Data – Percentages of Students in each Performance Level (Novice, Apprentice, Proficient, and Distinguished) by Standard Setting Method* (Attachment J)
- *Accountability Impact Data - 703 KAR 5:020 Subcategories by Method* (Attachment J)
- *Estimated Content Area Academic Indices by Method* (Attachment J)

Data labeled as Session 2 results from the Step 5 procedures after the instructional conversation. Data labeled as Session 4 results from the Step 5 procedures after the first exposure to *impact* data. Data labeled as Session 6 results from the Step 5 procedures after the horizontal conversation across content areas. Data labeled as Session 8 results from the Step 5 procedures after the vertical conversation within a content area among elementary, middle, and high school teachers. This should be considered the final recommendation resulting from the synthesis phase.

The following summarizes movement in teacher recommendations throughout this process. Of 54 cutpoints:

36 were set in session 2 and never changed
10 were set in session 2, modified in session 4 and NOT changed in sessions 6 or 8
1 was set in session 2, modified in session 4 and remodified in session 6
1 was set in session 2, modified in session 6

2 were set in session 2, modified in session 4 and remodified in session 8
1 was set in session 2, modified in session 6 and remodified in session 8
3 were set in session 2 and not remodified until session 8

Table 10 contains a summary of this data and how it changed through the process. It is important as one looks at the data reported for each content area, and particularly as one considers the differences in impact data (distributions of Novice, Apprentice, Proficient, and Distinguished) to fully understand the interaction of the *horizontal* conversation across each level (elementary, middle, and high school), and the vertical conversation within each content. As elementary, middle, or high school staff met in Session 5, they looked across content areas to consider both the instructional rationale presented by each content/grade specific committee as well as the impact data.[24] The same kind of interaction occurred in the *vertical* conversation where for example elementary science panelists presented their instructional and data issues to the middle and high school science panelists. There was opportunity for middle school social studies panelists to question middle school science panelists about both instructional and data concerns.

[24] Using chart paper, each content area communicated both instructional considerations, and the percent scoring Novice, Apprentice, Proficient, and Distinguished.

Table 10: SUMMARY TABLE OF CUT POINT RECOMMENDATIONS AT FOUR STAGES IN STEP 5

	Session 2	Session 4	Session 6	Session 8	Final
READING GRADE 4					
Nov/App	514	+0	+0	+0	514
App/Pro	541	+0	+0	+0	541
Pro/Dis	592	+9	+0	+0	601
READING GRADE 7					
Nov/App	477	+0	+0	+0	477
App/Pro	502	+9	+0	+0	511
Pro/Dis	561	+0	+0	+0	561
READING GRADE 10					
Nov/App	454	+0	+0	+0	454
App/Pro	537	+0	+0	+0	537
Pro/Dis	584	+0	+0	+0	584
MATHEMATICS GRADE 5					
Nov/App	548	-2	+0	+0	546
App/Pro	570	+5	+0	+0	575
Pro/Dis	619	+0	+0	+0	619
MATHEMATICS GRADE 8					
Nov/App	518	+0	+0	+0	518
App/Pro	555	+0	+0	+0	555
Pro/Dis	587	-3	+0	+0	584
MATHEMATICS GRADE 11					
Nov/App	525	+0	-2	+0	523
App/Pro	563	-5	+0	+0	558
Pro/Dis	592	+0	+0	+0	592
SCIENCE GRADE 4					
Nov/App	512	+0	+0	+0	512
App/Pro	554	+0	+0	+0	554
Pro/Dis	595	-7	+0	+0	588
SCIENCE GRADE 7					
Nov/App	489	+0	+0	+0	489
App/Pro	509	+17	+0	--9	517
Pro/Dis	540	+0	+0	+0	540
SCIENCE GRADE 11					
Nov/App	525	+0	+0	+0	525
App/Pro	570	+0	-10	+2	562
Pro/Dis	608	+0	+0	+0	608

Table 10 (Continued): SUMMARY TABLE OF CUT POINT RECOMMENDATIONS AT FOUR STAGES IN STEP 5

	Session 2	Session 4	Session 6	Session 8	Final
SOCIAL STUDIES GRADE 5					
Nov/App	524	+0	+0	+0	524
App/Pro	546	+0	+0	+0	546
Pro/Dis	586	+0	+0	+0	586
SOCIAL STUDIES GRADE 8					
Nov/App	482	+0	+0	+0	482
App/Pro	533	+0	+0	+0	533
Pro/Dis	591	-3	-8	+0	580
SOCIAL STUDIES GRADE 11					
Nov/App	517	-11	+0	+0	506
App/Pro	577	+0	+0	+0	577
Pro/Dis	621	+0	+0	+0	621
ARTS & HUMANITIES GRADE 5					
Nov/App	503	+0	+0	+0	503
App/Pro	580	-5	+0	+0	575
Pro/Dis	631	+0	+0	+0	631
ARTS & HUMANITIES GRADE 8					
Nov/App	478	+0	+0	+0	478
App/Pro	539	-10	+0	+20	549
Pro/Dis	566	+44	+0	+0	610
ARTS & HUMANITIES GRADE 11					
Nov/App	491	+0	+0	+0	491
App/Pro	554	+0	+0	+0	554
Pro/Dis	598	+0	+0	+0	598
PRACTICAL LIVING/VOCATIONAL STUDIES GRADE 5					
Nov/App	460	+0	+0	+O	460
App/Pro	507	+0	+0	+O	507
Pro/Dis	588	+0	+0	+O	588
PRACTICAL LIVING/VOCATIONAL STUDIES GRADE 8					
Nov/App	466	+0	+0	+0	466
App/Pro	514	+0	+0	+6	520
Pro/Dis	564	+0	+0	+6	570
PRACTICAL LIVING/VOCATIONAL STUDIES GRADE 10					
Nov/App	458	+0	+0	+0	458
App/Pro	506	+0	+0	+0	506
Pro/Dis	578	+0	+0	+3	581

READING:

At grade 4, the committee adjusted the Proficient/Distinguished cut-point slightly after seeing the impact data. The final recommendation would result in 57.2% of the spring 2000 students scoring Proficient or Distinguished.

At grade 7, the committee adjusted the Apprentice/Proficient cut-point slightly after seeing the impact data. The final recommendation would result in 51% of the spring 2000 students scoring Proficient or Distinguished.

At grade 10, the committee made no adjustments after initial recommendations. The final recommendation would result in 27.5% of the spring 2000 students scoring Proficient or Distinguished.

At the 4th grade level, the three methods could have resulted in a range of indices of 54.1 (Jaeger-Mills) to 80.0 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 80.0.

At the 7th grade level, the three methods could have resulted in a range of indices of 50.1 (Jaeger-Mills) to 81.5 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 78.4.

At the 10th grade, the three methods could have resulted in a range of indices of 46.4 (Jaeger-Mills) to 65.8 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 67.7. Note that the final recommendation results in an index that is higher than any one of the three procedures. This is due to the distribution of students at the high apprentice, proficient, and distinguished levels. The range recommended by the three independent standards setting procedures:

- For the Novice/Apprentice cut-point was 454 – 502 with the Step 5 recommendation being 454;
- For the Apprentice/Proficient cut-point was 537 – 567 with the Step 5 recommendation being 537;
- For the Proficient/Distinguished cut-point was 573 – 615with the Step 5 recommendation being 584.

FIGURE 15: Step 5 Distribution Within Performance Standards: Reading– Spring 2000

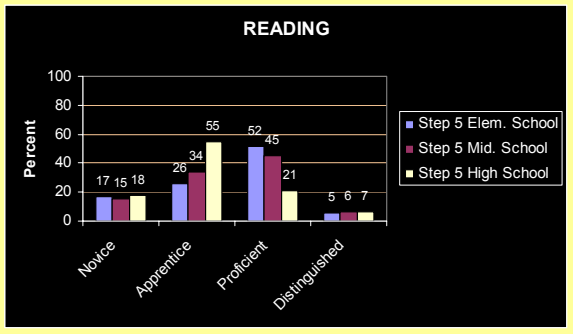
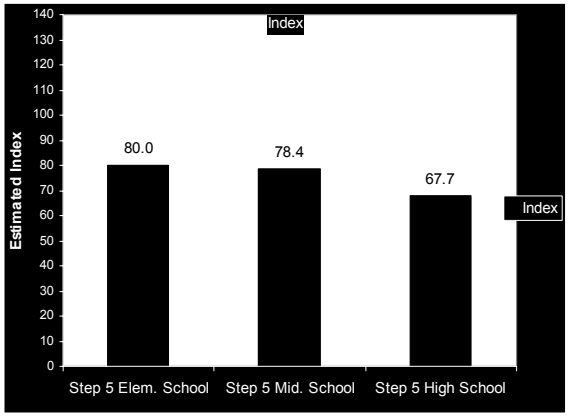


FIGURE 16: Step 5 Spring 2000 Estimated Indices: Reading – Spring 2000



Reading Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group started with the results of the CTB Bookmark as the method most clearly matching their expectations for the N/A and A/P cut points. They started with the results of the Contrasting Groups method for the P/D cut point.

The teachers selected the cut point for apprentice for the following instructional implications: 1) "recalling literal detail from a variety of reading passages would fall into the apprentice group" and 2) the "student would also need to demonstrate some understanding of text features (i.e. understanding the significance of italics falls into the apprentice

category)."

The teachers would have liked to lower the A/P cut point by two scale score points [Note: that would have been outside the allowable range.] They believed it should be lowered because 1) "following directions, sequencing summarizing and drawing conclusions is a multi-step process which requires an overall knowledge of text; and demonstrates a clear and accurate communication skill is defined under the proficient descriptor;" 2) "understanding homonyms is more complex than having a basic knowledge as referenced in the descriptor for apprentice"; and 3) "interpret specialized vocabulary is more accurately described in the proficient level descriptor as 'demonstrates clear and accurate.'" The N/A and A/P cut points were set initially and not changed based on impact data.

After an examination of the ordered-item booklet, item map, descriptors, and the impact data, the teachers adjusted the P/D cut point upwards to more closely match their expectations. They thought the students "are required to demonstrate an extensive understanding of literary elements. Also they need to demonstrate comprehensive knowledge of word meaning, word identification strategies and an understanding of textual features as indicated in the distinguished descriptors."

Reading Instructional Considerations – Middle School

Using the instructional summaries and the item maps, the middle school group started with the results of the CTB Bookmark as the method most clearly matching their expectations for the N/A and A/P cut points. Their selected P/D cut point was closest to the results of the Contrasting Groups method although the teachers stated that they lowered the CTB cut point.

Using the descriptors and item maps the teachers thought that the selected cut point for N/A was the point moving beyond skills in the novice performance range.

The cut point for A/P was chosen and then revised upwards to meet the point at which students "move from literal knowledge to overall knowledge of the text. The skills students are asked to demonstrate match the skills listed within the proficient" descriptors. The N/A and P/D cut points were set initially and not changed based on impact data.

Reading Instructional Considerations – High School

Using the instructional summaries and the item maps, the high school group began with the results of the CTB Bookmark method as the method most clearly matching their expectations for the N/A and A/P cut points. They selected the P/D cut point from the Contrasting Groups method and then adjusted it upwards, but did not change the N/A or A/P cut points.

The P/D cut point was adjusted upwards to meet the point at which the group thought that the skills required belonged in the distinguished set of descriptors. If the teachers could have adjusted the A/P cut point outside the range, they would have preferred to lower it seven scale score points because they thought that that is where analysis truly begins and prior knowledge is necessary.

The N/A and A/P cut points were set initially and not changed based on impact data. The P/D cut point was adjusted initially and then not changed based on impact data.

READING REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the degree of comfort you felt with the process and the degree of confidence you have in the standards recommended.

Elementary School

- All participants were comfortable with the process
- All participants felt confident with the standards recommended

- The group did feel that the cut point for Proficient should be at 539 rather than 541 because of instructional issues noted in Session 2.

  Session 2 Comment: We chose #541 as the cut point for Proficient, however we believe it should be #539 because following directions, sequencing summarizing and drawing conclusions is a multi-step process which requires an overall knowledge of text and demonstrates a clear and accurate communication skill is defined under the "proficient descriptor." Understanding homonyms is more complex than having a basic knowledge as referenced in the descriptor for apprentice (p1). Interpret specialized vocabulary is more accurately described in the proficient level descriptor …

- The process used a consistent alignment of documents.
- The group make-up was representative of all previous standard settings.
- The vertical and horizontal alignment/conversation was good.

Middle School

The process was difficult and caused us to carefully examine all methods. The synthesis was hampered by individuals not being aware of the other methods used. Could a control group have been selected that participated in all methods?[25]

The item map was carefully examined against the descriptors to determine at what point a student would have exhibited the skills listed at each performance level. We referred to the sample student responses from Jaeger Mills to make sure students were demonstrating those descriptors in their answers at the appropriate level. This careful examination made us more confident of our decision.

High School

Comfort
- The committee was very comfortable given the parameters (ranges, methods used).
- The committee was comfortable because we did have a range to consider.
- The committee was comfortable because of the vertical and horizontal picture of the standards.

Confidence; The committee felt very confident – especially now (when) that they are in black and white and will be in teachers hands.

[25] The committee consisted of one from the draf descriptor step, four from the CTB Bookmark Step, and two from the Jaeger-Mills Step. The Department was unable to secure representatives of the Contrasting Groups Step.

MATHEMATICS:

At grade 5, the committee adjusted the Novice/Apprentice and Apprentice/Proficient cut-points slightly after seeing the impact data. The final recommendation would result in 31.2% of the spring 2000 students scoring Proficient or Distinguished.

At grade 8, the committee adjusted the Proficient/Distinguished cut-point slightly after seeing the impact data. The final recommendation would result in 25.2% of the spring 2000 students scoring Proficient or Distinguished.

At grade 11, the committee adjusted the Apprentice/Proficient cut-point slightly after seeing the impact data, and adjusted the Novice/Apprentice cut-point slightly after talking across content areas at the high school level. The final recommendation would result in 26.3% of the spring 2000 students scoring Proficient or Distinguished.

At the 5th grade, the three methods could have resulted in a range of indices of 54.5 (Jaeger-Mills) to 64.3 (Contrasting Groups). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 60.4.

At the 8th grade, the three methods could have resulted in a range of indices of 49.8 (Jaeger-Mills) to 64.5 (Contrasting Groups). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 59.9.

At the 11th grade, the three methods could have resulted in a range of indices of 41.1 (Jaeger-Mills) to 57.7 (Contrasting Groups). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 57.2.

The Step 5 recommendations for mathematics are summarized in Figures 6 and 7. In general, the recommendations are consistent across the elementary, middle , and high school levels. The resulting mathematics index would range from 57.2 at the high school level to 60.4 at the elementary level.

FIGURE 17: Step 5 Distribution Within Performance Standards: Mathematics – Spring 2000

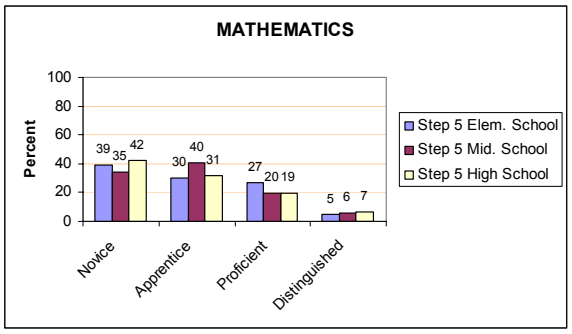
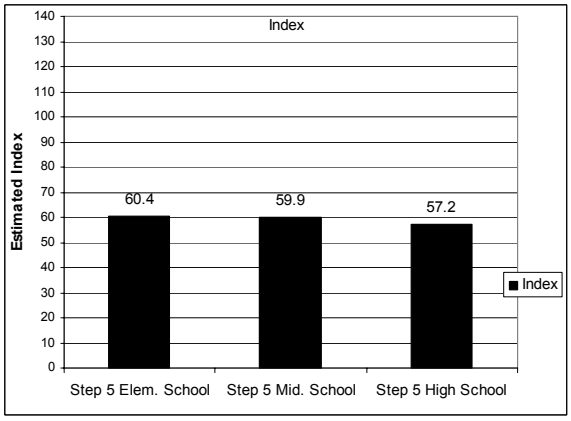


FIGURE 18: Step 5 Spring 2000 Estimated Indices: Mathematics – Spring 2000



Mathematics Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group started with the results of the CTB Bookmark as the method most clearly matching their expectations. They adjusted the cut scores to more clearly match their expectations; downwards for the N/A cut point and upwards for the A/P and P/D cut points.

The teachers examined the cognitive descriptions for apprentice and the items around the CTB Bookmark cut point for N/A. Based on that examination they adjusted the N/A cut point downwards two scale score points. Using samples of work, the descriptors, and the impact data, the A/P cut point was adjusted upwards. The P/D cut point was set initially and not changed based on impact data.

Mathematics Instructional Considerations - Middle School

The middle school group made their decisions by consensus and did not select one method, but split the difference between the CTB Bookmark and Contrasting Groups methods. They referred to the instructional summaries, item

maps and student work to make those decisions.

Using the descriptors and item maps the teachers thought that the selected cut point for N/A was the point moving beyond simple facts to beginning to reason and beginning to problem solve.

The cut point for A/P was chosen in the middle of two methods as it was thought that the lower score was too low – simple conclusions – and that the chosen cut point reflected where student work showed a distinct tie to proficient descriptors. The cut point required showing "what" and was beginning to show "why".

The cut point for P/D was selected and then revised downwards. After reviewing the range of questions around the cut score, the group thought that the requirements for making connections between disciplines, analyzing and communicating with multiple sets of data and making inferences were all performance criteria for distinguished. The downward revision was a reflection of that conclusion.

Mathematics Instructional Considerations - High School

Using the instructional summaries and the item maps, the high school group began with the results of the Contrasting Group method. They adjusted the N/A and the P/D cut points higher, but did not change the A/P cut point.

The N/A cut point was adjusted upwards as the group thought that to move from novice to apprentice a student should begin to do multiple step problems and begin to demonstrate abstract thinking. The group considered adjusting upwards the A/P cut point based on the descriptors, but retained the original cut point based on the item maps. The P/D cut point was adjusted 4 points higher to reflect the thought that to move from proficient to distinguished a student should be able to justify answers and think abstractly.

MATHEMATICS REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the degree of comfort you felt with the process and the degree of confidence you have in the standards recommended.

Elementary School

Well developed method of pulling all the former work together. We feel very confident in the cut scores we established and feel fairy strongly that they are supported by the descriptors, student work, and core content. Involving teachers who work with students on a daily basis gave additional confidence to this recommendation.

Middle School

1) The group made decision by consensus.
2) The group believes standards are just and fair.
3) The process could have been improved with additional student work and additional test questions available.

High School

The committee was comfortable with this process. It was understandable. There was time to reflect, and ask questions. Meeting with other teams across content & grade levels was illuminating.

Given the resources we had to work with, some were very confident. Others said additional data (order item booklet, student work with scale score) would have been useful and could have contributed to greater confidence.

SCIENCE:

At grade 4, the committee adjusted the Proficient/Distinguished cut-point slightly after seeing the impact data. The final recommendation would result in 35.9% of the spring 2000 students scoring Proficient or Distinguished.

At grade 7, the committee adjusted the Apprentice/Proficient cut-point upward by 17 scale score units after seeing the impact data (509 to 526). After reviews with both middle school peers and elementary and high school science committees, the Apprentice/Proficient cut-point was adjusted to 517 in scale score units representing an overall upward adjustment of 8 scale score units. The final recommendation would result in 28.3% of the spring 2000 students scoring Proficient or Distinguished.

At grade 11, the committee adjusted the Apprentice/Proficient cut-point downward by 10 scale score units after review with high school peers. A small upward adjustment was made in this cut-point after reviewing with elementary and middle school science committees.[26] The final recommendation would result in 27.3% of the spring 2000 students scoring Proficient or Distinguished.

At the 4th grade, the three methods could have resulted in a range of indices of 44.9 (Jaeger-Mills) to 71.5 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 73.0. Note that the final recommendaton results in an index that is higher than any one of the three procedures. This is due to the distribution of students at the high apprentice, proficient, and distinguished levels. The range recommended by the three independent standards setting procedures:

- For the Novice/Apprentice cut-point was 525 – 561 with the Step 5 recommendation being 525;
- For the Apprentice/Proficient cut-point was 558 – 604 with the Step 5 recommendation being 562;
- For the Proficient/Distinguished cut-point was 587 – 619 with the Step 5 recommendation being 608.

At the 7th grade, the three methods could have resulted in a range of indices of 46.8 (Jaeger-Mills) to 76.8 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 62.3.

At the 11th grade, the three methods could have resulted in a range of indices of 34.2 (Jaeger-Mills) to 62.2 (Contrasting Groups). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 60.5.

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[26] The science committees spent more time than did the others in *vertical* conversation. Additional time was made in the schedule to permit the middle and high school science committees to consider their recommendations jointly before reconvening in grade specific committees to make final recommendations.

FIGURE 19: Step 5 Distribution Within Performance Standards: Science – Spring 2000

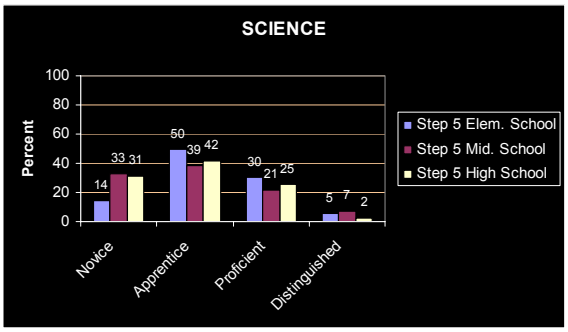
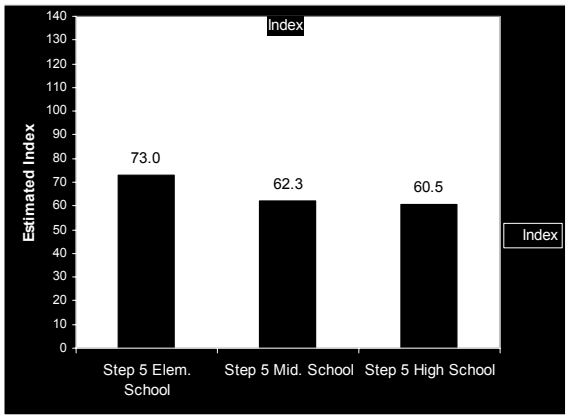


FIGURE 20: Step 5 Spring 2000 Estimated Indices: Science – Spring 2000



Science Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group started with the results of the CTB Bookmark as the method most clearly matching their expectations. They adjusted downwards the P/D cut score to more clearly match their expectations.

The teachers examined the cognitive descriptions for apprentice and the items around the CTB Bookmark cut point for N/A and the cut point for A/P. Based on that examination they decided it is reasonable to expect the teachers to teach the content in the items below this cut point to apprentice level students. The N/A and A/P cut points were set initially and not changed based on impact data.

Using samples of work, the descriptors, and the impact data, the P/D cut point was again adjusted downwards where it was then not far from the cut point set by the Contrasting Groups method. Teachers stated that the students must match functions to structure; compound questions require complex reasoning; questions are interrelated; students must respond to all parts of the question; and asked whether it was reasonable for students to respond to this question at the proficient level.

Science Instructional Considerations – Middle School

Using the instructional summaries and the item maps, the middle school group started with the results of the CTB Bookmark as the method most clearly matching their expectations for the N/A cut point. Their selected P/D cut point was closest to the results of the Contrasting Groups method. Their selected A/P cut point was in between the result of the CTB Bookmark and Contrasting Groups methods.

Using the descriptors and item maps the teachers thought that the selected cut point for N/A was the point where abstract concepts began and there was a limited application of diagrams. The N/A and P/D cut points were set initially and not changed based on impact data.

The cut point for A/P was chosen in the middle of two methods as it was thought that that was where the "content is in all three processes as minimally proficient"; it "requires student to answer multiple parts of question"; to "use diagrams accurately"; and there was a more "difficult vocabulary". The chosen cut point reflected where student work showed a distinct tie to proficient descriptors. After reviewing impact data the A/P cut point was adjusted twice. First it was adjusted upwards by 17 scale score points. "Since the classroom experience says that" approximately "1/3 of KY students are not currently proficient – adjusted scale score has been raised." The questions between the original adjusted cut point and the second adjustment "are generally questions that content and skills should be present in the student in" the proficient category. After additional review of impact data and further examination of the content in the

items, the A/P cut point was lowered by 9 scale score points to the point where it was just slightly below the Contrasting Groups cut point. The teachers decided that the content below this cut point must fall in basic/limited category of knowledge and that above this cut point the level of appropriate knowledge was appropriate for the proficient category.

Science Instructional Considerations – High School

Using the instructional summaries, student work, and the item maps, the high school group began with the results of the CTB Bookmark method as the method most clearly matching their expectations.

The teachers thought that the student responses within a range around the CTB Bookmark A/P cut point "showed a distinct difference in content, knowledge, application, completeness of answers, and communication skills". The A/P cut point was adjusted twice. First, it was adjusted downwards by ten scale score points and second, it was adjusted two points upwards which put it close to the midpoint between the result of the Contrasting Groups and CTB Bookmark results. The teachers wanted to see the impact data after the first adjustment and those results influenced their decision to make the second adjustment.

The N/A and P/D cut points were set initially and not changed based on impact data.

SCIENCE REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the degree of comfort you felt with the process and the degree of confidence you have in the standards recommended.

Elementary School

- Elementary Science Step 5 participants are confident with the recommendations as they are comparable with past 3 processes (CTB Bookmarking, Contrasting Groups, & Jaeger-Mills).
- Elementary Science Step 5 participants benefited from expertise of participants from all prior processes (CG, J-M, CTB Bookmarking).
- Elementary Scicence Step 5 participants are confident due to hard work & seriousness of elementary science participants.
- Elementary Science Step 5 participants are confident because they approached synthesis procedure "looking to the best interests of Kentucky students."
- All elem. Sc. Step 5 participants were knowledgeable of Core Content, Program of Studies, and grade 4 science descriptors.
- Ordered item booklets, anchor papers, & scoring rubrics were vital to validity of Elementary Science Step 5 participant decisions.

Middle School

All members of the team feel very comfortable with the process used and the information provided to move through the process. The team felt a great deal of confidence in the outcome and in the team composition (with elementary/high school). The deliberation and meticulous work ethic in the team really heightened the entire experience. The 1,700 teachers' collective voices have been heard through the entirety of the process.

High School

- We feel confident in the recommendations we made. They were based on the data provided and rich, meaningful conversations around realistic standards.
- We think another group of science teachers using the same data would arrive at the same recommendations.
- We would have liked to have more student responses to help us in our decision making process.

SOCIAL STUDIES:

At grade 5, the committee made no adjustments after their initial recommendations. The final recommendation would result in 39.8% of the spring 2000 students scoring Proficient or Distinguished.

At grade 8, the committee adjusted the Proficient/Distinguished cut-point slightly after seeing the impact data, and again after reviewing instructional and data issues with middle school peers. The total adjustment was downward by 11 scale score units. The final recommendation would result in 28.3% of the spring 2000 students scoring Proficient or Distinguished.

At grade 11, the committee adjusted the Apprentice/Proficient cut-point downward by 11 scale score units after seeing the impact data. The final recommendation would result in 24.0% of the spring 2000 students scoring Proficient or Distinguished.

At the 5th grade, the three methods could have resulted in a range of indices of 38.3 (Jaeger-Mills) to 73.7 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 67.0.

At the 7th grade, the three methods could have resulted in a range of indices of 48.9 (Jaeger-Mills) to 69.8 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 64.1.

At the 11th grade, the three methods could have resulted in a range of indices of 48.3 (Jaeger-Mills) to 63.5 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 63.5.

FIGURE 21: Step 5 Distribution Within Performance Standards: Social Studies – Spring 2000

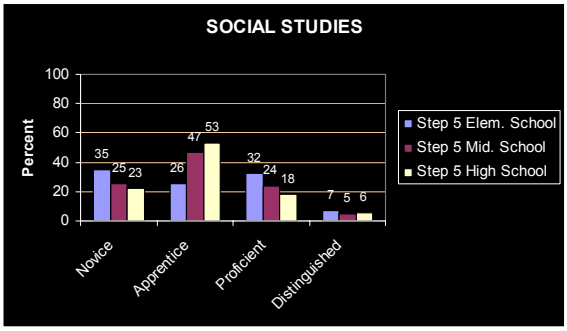
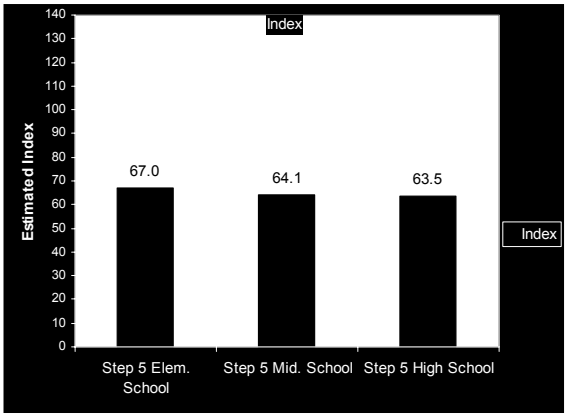


FIGURE 22: Step 5 Spring 2000 Estimated Indices: Social Studies – Spring 2000



Social Studies Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group selected a cut point that was in the middle of the results of the CTB Bookmark and the Contrasting Groups methods as most clearly matching their expectations for the N/A and A/P cut points. They adjusted the cut point for P/D upwards from the CTB Bookmark method. Once the initial adjustments were made to the cut points, they were not changed based on impact data.

The N/A cut point was the point beyond which "students must define differences and similarities"; it "requires a basic level of knowledge and general understanding all strands"; "requires students to do more than just define terms"; "requires students to understand relevance of ideas"; and "multiple steps and responses are required at this level".

Beyond the A/P cut point the assessment "requires an understanding of causes and effects of decision and events"; "interpretation, abstract thinking, comparison all required at this level"; "requires an understanding of diversity"; "students must apply knowledge at this level"; "students must read to interpret"; "extended or broad knowledge is required at this level".

Beyond the P/D cut point the student is "required to integrate and discriminate" and "must utilize extensive knowledge and make connections". The assessment "requires application of knowledge," "extensive vocabulary," and "requires

some synthesis".

Social Studies Instructional Considerations – Middle School

Using the instructional summaries and the item maps, the middle school group started with the results of the CTB Bookmark as the method most clearly matching their expectations for the N/A and A/P cut points. They started with the results of the Jaeger-Mills method for the P/D cut point. They adjusted the cut scores to more clearly match their expectations; upwards for both the N/A and A/P cut points and downwards for the P/D cut point. Once the initial adjustments were made to the cut points for N/A and A/P, they were not changed based on impact data.

Using the descriptors and item maps the teachers thought that the selected cut point for N/A represents the point where items that come afterwards are clearly different from the items before. The group believes that the student is required to make a choice, to defend and explain reasoning, and that "this is a definite difference between novice and apprentice".

The group felt that the impact data reinforced the decision about the selected A/P cut point. That cut point had been selected as the point that "takes students to higher level on Bloom's Taxonomy".

The cut point for P/D was selected and then revised downwards twice. After reviewing the range of questions around the cut score and the descriptors, the group thought that the downward revisions more accurately marked the beginning of distinguished. "From this point on the student must provide the whole answer from their understanding of the content – the answer must be complete and include examples from real life"

Social Studies Instructional Considerations – High School

The high school group selected N/A and A/P cut points that were between the CTB Bookmark and Contrasting Groups methods. They started with the results of the Contrasting Groups method for the P/D cut point. They referred to the instructional summaries, item maps and student work to make those decisions. Once the initial selections were made for the cut points for A/P and P/D, they were not changed based on impact data.

Using impact data the N/A cut point was adjusted downwards.

SOCIAL STUDIES REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the degree of comfort you felt with the process and the degree of confidence you have in the standards recommended.

Elementary School

The group felt very confident in the standards the committee recommended. Committee members were present that had participated in each of the three prior processes. The group worked well together. Intensive synthesis allowed the group to reach true consensus. All our decisions were made on the basis of instructional practice, not personal feelings or peer pressure.

Middle School

Process

- The committee felt there was a good variety of authentic data.
- The committee felt there was a mix of good professional people.
- There was good distribution geographically.
- The process was taken seriously.
- There was sufficient time, and the process was not rushed.
- All stakeholders views were respected, and there was good discussion.
- The committee was glad it's teachers who are making this recommendation.

Standards

- The standards seem well-grounded in good information.
- The standards are justified by descriptors evolving from the 3 previous processes.
- If not perfect, these standards seem very close
- The standards are based on a knowledge of what is age appropriate
- Will feel even better when we are more sure there is increased congruence between descriptors & the assessment

High School

- The committee felt it was a difficult process but there was good representation of teachers and opinions.
- The committee was very comfortable with the process, qne felt it was valuable.
- Sometimes voices were dominant, but overall, professionalism took over and good decisions were made.
- Range was confusing at times. Cut scores for high school Social Studies “proficient” and elementary social studies “apprentice” could be slightly lower.
- Ideas and opinions were valued.

ARTS & HUMANITIES:

At grade 4, the committee adjusted the Apprentice/Proficient cut-point slightly after seeing the impact data. The final recommendation would result in 13.3% of the spring 2000 students scoring Proficient or Distinguished.

At grade 7, the committee adjusted the Apprentice/Proficient cut-point downward by 10 scale score units, and the Proficient/Distinguished cut-point upward by 44 scale score units after seeing the impact data. The final recommendation would result in 35.8% of the spring 2000 students scoring Proficient or Distinguished.

At grade 11, the committee made no adjustments to their initial judgments. The final recommendation would result in 19.5% of the spring 2000 students scoring Proficient or Distinguished.

At the 4th grade, the three methods could have resulted in a range of indices of 41.6 (Jaeger-Mills) to 52.0 (Contrasting Groups). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 43.8.

At the 7th grade, the three methods could have resulted in a range of indices of 47.5 (Jaeger-Mills) to 74.4 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 62.6.

At the 11th grade, the three methods could have resulted in a range of indices of 41.8 (Jaeger-Mills) to 55.7 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 51.3.

FIGURE 23: Step 5 Distribution Within Performance Standards: Arts & Humanities – Spring 2000

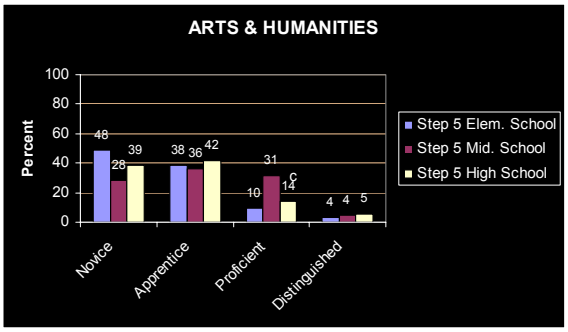
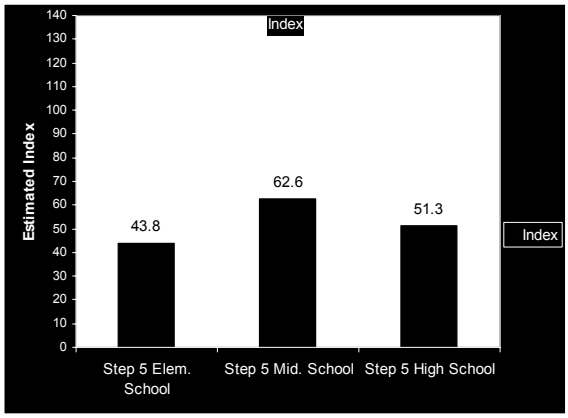


FIGURE 24: Step 5 Spring 2000 Estimated Indices: Arts & Humanities – Spring 2000



Arts and Humanities Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group started with the results of the Contrasting Groups method as the method most clearly matching their expectations for the N/A cut point; the result of the Jaeger-Mills method as the method most clearly matching their expectations for the A/P cut point; and the result of the CTB Bookmark as the method most clearly matching their expectations for the P/D cut point. They adjusted the P/D cut score downwards to more clearly match their expectations. The N/A and P/D cut points were set initially and not changed based on impact data.

The teachers examined the cognitive descriptions for apprentice, student work and the items around the CTB Bookmark cut point for A/P. Based on that examination they adjusted the A/P cut point downwards five scale score points.

Arts and Humanities Instructional Considerations – Middle School

The middle school group chose CTB as the framework for choosing all three cut points. After looking at the instructional summaries, test questions and student responses, they believed that the original CTB cut points should be

raised, which "also more closely reflects the teachers' predictions in the Contrasting Groups study". The N/A cut point was set initially and not changed based on impact data.

The cut point for A/P was selected and then revised twice. First it was revised downwards because teachers though that proficiency "requires broad knowledge of historical context of works of art." Then later it was revised upwards higher than the starting point "to address vertical instructional alignment from elementary to middle to high."

The cut point for P/D was raised 44 points to reflect that the items above that point require "extensive understanding" of abstract concepts.

Arts and Humanities Instructional Considerations – High School

Using the instructional summaries, student work and the item maps, the high school group began with the results of the Bookmark method as the method most clearly matching their expectations. They adjusted each of the cut points higher to more closely match their expectations. The cut points were set initially and not changed based on impact data.

After the teachers discussed the data from the vertical and horizontal instructional impact groups, they expressed confidence in their previous decisions. They thought that the cut points they set "insure the following:

- fine instruction
- affirming a job well done
- opportunities for those who can to succeed
- proficiency is attainable
- teaching to higher levels would occur
- teaching would get beyond the basics
- teachers would be encouraged to get to proficiency
- standards are high enough, yet attainable"

The teachers thought that "assessment can be changed only through quality instruction over time. They are comfortable with the" cut points "they have set enabling them to achieve their instructional goals."

ARTS & HUMANITIES REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the degree of comfort you felt with the process and the degree of confidence you have in the standards recommended.

Elementary School

- The limitation of 1/3 of test questions created discomfort in establishing cut-off especially regarding sub domain information.
- We did not feel comfortable using contrasting group data.
- We did a good job comparing documents and correlating data to reach cut offs.
- We feel that recommendations are very defensible.
- We needed to be informed (more) on how this process would impact 1999-2000 results early in the process. Some misperceptions evident in vertical discussions as to how and when these cut off points are applied.

Middle School

- We appreciate the opportunity to be involved in this important work.
- The group was comfortable and confident with the synthesis process. It was well planned to value and consider the work of all previous groups. We are confident about the standard we recommend for Arts and Humanities at the middle level.

- We were pleased the synthesis step, and all previous steps, focused on content and descriptors and required that we leave outside biases behind.
- Including representatives from all steps in the synthesis step meant we had expertise of participants from which to draws. It made the group process effective.
- The amount of work and the design of the whole process is impressive and revealing – 1,700 teachers, 3 steps plus descriptors drafting!

Wishes: We needed more actual student responses to see what students can actually do. Also, vertical discussion prior to adjustment to actually look at the kinds of questions students are expected to answer.

High School

- We are confident & comfortable in our findings
- The new standards set by this group meet their personal expectations.
- Changes were made in complexity charts to indicate feelings of the group.
- The group was open to truly listening to the contributions of each member & to being sensitive to each one's contributions.

Some individual in other content areas asked us to lower our cut points since some schools seem to have difficulty providing opportunities for A & H instruction. Lowering our standards to meet expectations of these individuals and to reflect current instructional practices being conducted in high schools in unacceptable.

PRACTICAL LIVING/VOCATIONAL STUDIES:

At grade 4, the committee made no further adjustments to their recommendations after their initial recommendations. The final recommendation would result in 45.3% of the spring 2000 students scoring Proficient or Distinguished.

At grade 7, the committee adjusted the apprentice/proficient and Proficient/Distinguished cut-points after reviewing recommendations with middle school peers. The final recommendation would result in 35.3% of the spring 2000 students scoring Proficient or Distinguished.

At grade 10, the committee made no further adjustments to their recommendations after their initial recommendations. The final recommendation would result in 48.4% of the spring 2000 students scoring Proficient or Distinguished.

At the 4th grade, the three methods could have resulted in a range of indices of 51.6 (Contrasting Groups) to 80.3 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 70.0.

At the 8th grade, the three methods could have resulted in a range of indices of 53.5 (Jaeger-Mills) to 69.4 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 66.1.

At the 10th grade, the three methods could have resulted in a range of indices of 51.3 (Jaeger-Mills) to 73.4 (CTB Bookmark). The Step 5 Procedure recommends a set of cut-points resulting in a spring 2000 index of 73.5. Note that the final recommendation results in an index that is higher than any one of the three procedures. This is due to the distribution of students at the Proficient, and distinguished levels. The range recommended by the three independent standards setting procedures:

- For the Novice/Apprentice cut-point was 458 - 490 with the Step 5 recommendation being 458;
- For the Apprentice/Proficient cut-point was 506 – 555 with the Step 5 recommendation being 506;
- For the Proficient/Distinguished cut-point was 563-629 with the Step 5 recommendation being 578.

FIGURE 25: Step 5 Distribution Within Performance Standards: Practical Living / Vocational Studies – Spring 2000

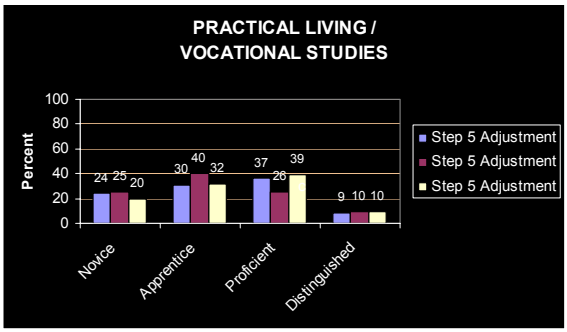
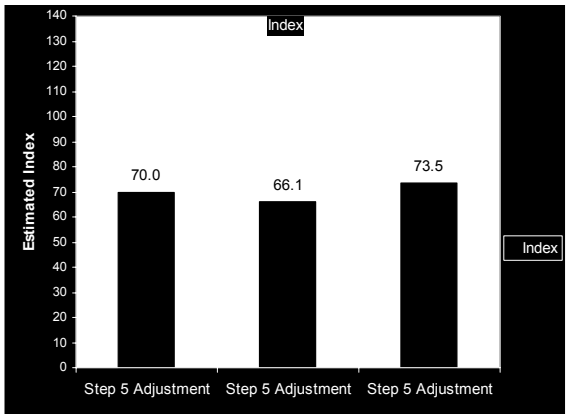


FIGURE 26: Step 5 Spring 2000 Estimated Indices: Practical Living / Vocational Studies – Spring 2000



PL/VS Instructional Considerations – Elementary School

Using the instructional summaries and the item maps, the elementary group displayed a pattern for each cut point of selecting an initial cut point that was at or above the CTB Bookmark, near the Contrasting Groups results, and not approaching the higher point of Jaeger-Mills.

The teachers used their available materials to set the cut points aligning the descriptors and the content and cognitive skills. They saw inconsistency between descriptors and cognitive demands for the Jaeger-Mills cut point. They thought the

Contrasting Group cut point was too high and the CTB too low for an appropriate match of content, cognitive skills and descriptors. The cut points were set initially and not changed based on impact data.

After the horizontal data impact review, the teachers stated that "no new information was given to change our minds. Teachers were satisfied with the percent of students at N/A/P/D levels. These levels seem to be balanced and reflect the distribution in classrooms/schools/state. After the vertical data impact review the teachers were more convinced about their decisions. "We heard, we listened, we considered, we cogitated, we deliberated, we philosophized, we debated, we argued, we reiterated, and we did not change!!"

PL/VS Instructional Considerations – Middle School

Using the instructional summaries and the item maps, the middle school group started with the results of the CTB Bookmark as the method most clearly matching their expectations.

The N/A cut point was set initially and not changed based on impact data. The A/P and P/D cut points were adjusted upwards after the teachers "considered standard deviation and questions that could be affected."

Using the descriptors and item maps, the teachers thought that the selected cut point for N/A was the point where "students' knowledge connects or relates to more than one subject." The selected cut point for A/P reflects "students at this level begin to show general real world connections and applications." They demonstrate "more in-depth understanding of and application of vocabulary." At the P/D cut point students "demonstrate ability to make specific real world connections and applications." The assessment "requires more in depth details and concepts." The assessment also "requires application of extensive prior knowledge' and "elaborate use of content specific vocabulary."

PL/VS Instructional Considerations – High School

Using the instructional summaries and the item maps, the high school group began with the results of the CTB Bookmark method. They adjusted the P/D cut point two points lower, but did not change the N/A or A/P cut points. The N/A and A/P cut points were set initially and not changed based on impact data.

The teachers thought that the CTB method best "represents the instructional range of proficient students." They thought that the Jaeger-Mills range went too high and asked for "extensive and insightful application – too much for beginning range of proficient."

The P/D cut point was adjusted upwards three points "after meeting in cross level groups and after extensive discussion." They decided that they needed to "disregard one question in the item ordered book" as they were "focusing too much on the questions instead of the instructional implications." At that point the group reached consensus on the cut point.

PRACTICAL LIVING/VOCATIONAL STUDIES REFLECTIONS FROM SESSION 10 OF STEP 5

TASK: Within the total context of the Step 5 synthesis, draft the group's statement to the Kentucky Board of Education addressing the <u>degree of comfort</u> you felt with the process and the <u>degree of confidence</u> you have in the standards recommended.

<u>Elementary School</u>

- We feel highly comfortable with our decision – our group worked well together and challenged each others' thought processes to look at information on a broad perspective.
- We felt well prepared by our leaders; and our group facilitator was strong and helpful in understanding the process.
- We feel we can instructionally justify our decisions.

Middle School

- Core Content sub domains were well represented.
- There were participants from all previous standard setting procedures in the group.
- Group discussions were professional and comprehensive.
- Participants felt they needed more student work.

High School

The members of the PL/VS high school team feel very comfortable with the standard setting process. Over 1,700 teachers were involved in the total process. This provides a sense of ownership and confidence that our voice has been heard. Our group was composed of members who had participated in all phases of the process. Therefore, there were no gaps in understanding the work contributed by each phase. We very carefully considered the core content, the descriptors, and the item map, as we discussed the cut off points. After much discussion, our group reached a consensus. All members feel confident that our decision accurately represents the ranges of novice, apprentice, proficient, and distinguished.

Recommendations for Establishing CATS Assessment and **Accountability Performance Standards and Cutscores**[*]

prepared by the
Kentucky National Technical Advisory Panel on Assessment and Accountability
(James Catterall, Richard Jaeger, Suzanne Lane, Robert Linn, David Miller,
John Poggio and Andrew Porter)
July 1999

A crucial element in the implementation of the KERA initiative via CATS is the definition of performance standards (i.e., what is meant by Distinguished, Proficient, Apprentice, and Novice) and following from these the determination of the specific scores on each test that result in student classification (i.e., what score range on an assessment leads to each particular classification). Student classification rates then form the basis for school and district accountability. It merits reflection that the Kentucky assessments have changed significantly, and the components that create the accountability system have changed in very meaningful ways. Therefore, it is not only timely but also essential that the performance standards and the related assessment cutscores for each assessment be revisited by Kentuckians and, as necessary, and needed revised. NTAP strongly advises that procedures be decided on and put in place to examine and establish performance standards and cutscores for the new Kentucky CATS.

Rationale, Justification and Issues

We begin by underscoring the significance of the changes to the Kentucky assessments and accountability system over the past twelve to eighteen months. To identify a few:

- new multiple choice and norm referenced test components are being added into the mix of assessments at all levels,
- test length in select areas is being limited,
- the Core Content is being revised which will lead to test content changes,
- the grades tested in select content areas are being changed,
- a number of test items previously used have been eliminated or revised,
- the method for equating tests across biennia to monitor change is being altered, and
- the school accountability system has changed.

Such metamorphosis of Kentucky's assessment and accountability program in our opinion is healthy and to be expected. As we review trends nationally, we find that states that began their reform in the early 1990s are today invested in the process of review and adjustment of their assessment and accountability programs. Each of these states has discovered through experience ways in which their policies and practices can be further strengthened. The goal should be one of continuous improvement based on solid analysis. Thus given the experience in Kentucky over the decade, to repeat, change is healthy and expected. A key point however is that in the presence of such changes, the definitions of the performance standards should also be revisited. It is clear to us, that the changes to the tests create a situation making it necessary to re-evaluate and determine new cutscores. With so much change,

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[*] A *Performance Standard* is a statement of expectation describing the knowledge, skill and capacity of the individual that becomes associated with a specific categorization or labeling (e.g., novice, apprentice, proficient, and distinguished). *Cutscores* are those score values on the assessment score scale that form the boundaries between continuous levels of student performance (e.g., 0 to 40, 40 to 80, 80 to 100, and 100 to 140). The cutscore ranges define placement into the specific performance standards categories.

now is also a time to reconsider the performance standards categories and their definitions, and determine if changes are needed or would be advantageous.

State education leadership needs to be involved at this time in a process that reviews the decisions of the past and that they consider the need for change. Determining performance standards is not something that emerges naturally from a precise and well-defined data gather activity. Kentucky's decisions of the past regarding student performance categories and cutscores have not remained static: intermediate categories have been adopted (i.e., high apprentice, medium novice, etc.) to better reflect what is valuable and informative to practice, and in some tested areas placement into the Distinguished category has been based on scores below the actual established cutscores. Such changes signal the need to be vigilant regarding appropriateness of standards, and a sound system is always mindful of the need for change. Based on limited study by NTAP we believe there is a need to evaluate the appropriateness and reasonableness of the current performance standard categories and their definition. We recommend that a re-evaluation and determination of standards is not merely opportune in the face of other changes, but is needed on a more frequent basis than some might imagine. Even in the absence of change, NTAP advises that there should be planning for a re-evaluation of performance standards and associated cutscores at least every five years.

As Kentucky moves forward re-establishing and perhaps re-affirming much of what may already in place regarding assessment standards, while we will benefit by reflecting on the past, we must not be tied absolutely to the past. NTAP, as does state leadership, believes all children can learn and schools must provide opportunities for this goal to be realized for all students. We also value the expectation of student receiving instruction that sets out challenging curricular expectations and holds students and schools accountable to high standards. Thus, what we propose as essential to occur via standard setting methods does not differ or take exception to the goals and expectations of the past decade. We advise that now is a time to reconsider and as needed make adjustments to the decisions of the past.

The NTAP Proposal

Experience clearly indicates that the standards that are established depend upon the standard setting method that is employed, how the method is implemented, and who the participants are in the process. Thus, our proposal relies on a number of interlocking yet independent components to inform the decision making that needs to occur. To our knowledge all the features of the plan we are proposing have not heretofore been so linked, but what we have incorporated provides guidance based on a variety of differing methods and allows the standards to be shaped by different audiences. Our experience suggests that the decisions can be guided better by a combination of multiple methods than by a single method. In the final analysis, determining assessment standards is a judgment process requiring decision making under uncertainty. Our goal has been to allow this process to be influenced by all involved and impacted constituents and to control the degree of uncertainty by referencing actual student performance. We have attempted to do this by recommending test-centered, student and teacher-centered, and standards-centered methodologies. In addition, we propose to evaluate the reasonableness of the resultant cutscores by considering their trustworthiness and credibility in comparison to National Assessment of Educational Progress (NAEP), the Third International Mathematics and Science Study (TIMSS), and historical KIRIS results and standards.

This proposed plan was conceived during an NTAP meeting and we benefited from input and reaction during our discussions with KDE and OEA staff, the LRC liaison, and the CATS assessment and validation contractors. An experienced and capable contractor needs to be identified to carry out this work which will be monitored by the Board and NTAP, and supervised by KDE and OEA. The method is to be implemented in six steps or stages identified briefly below along with a time frame. The steps are elaborated following this outline presentation.

(1) Consider, discuss and establish the CATS performance standards. This activity provides for a review of the past system and a methodology to help guide needed change (August 1999 through January 2000)

(2) Educator panels are formed for each assessment at each grade; the panels carry out the CAB Bookmark cutscore procedure (September through October 2000)

(3) Following the Bookmark procedure, the second stage of the Jaeger-Mills method, setting cutscores, is introduced and completed by independent panels (October and November 2000)

(4) A field-based Contrasting Groups cutscore methodology is implemented and results are available to further concurrent validation along with the Bookmark and Jaeger-Mills results (November and December 2000)

(5) Emerging cutscore standards from the applied procedures are reviewed and evaluated by panels in consideration of spring 2000 CATS results (November and December 2000)

(6) The Board receives data and recommendations for cutscores that are reviewed and evaluated against NAEP, TIMSS and KIRIS performance standards and expectations (January and February 2001)

In the following presentation, we elaborate the methodology presented above. This section is not prepared to present the entire methodological plan, rather to identify the significant features of each step. Based on reaction and feedback, we expect to review and perhaps modify this proposal. NTAP intends to continue to monitor and advise regarding implementation of the procedures.

Step [1]: Consider, discuss and establish the CATS performance standards: establish a process to review the past system, and then systematically provide for modifications and elaboration as appropriate

The importance of this first step cannot be overemphasized. It is comprised of two activities: a review by the Board would could result in changes to the existing performance standard categories and their definitions, and then an independent review by Kentucky educator's to react to and advise the Board as to the need for other adjustments or refinements to the standards. The expectation is that all vested parties under the leadership, direction and guidance of the Kentucky Board of Education need to engage in a discussion and finalization of the state's performance standards for the student assessments. Historically these have been identified by the categories and accompanying definitions of Novice, Apprentice, Proficient, and Distinguished. Today the questions meriting attention include:

- Are these categories sufficient? Would five or even six categories better serve the state's interests and needs?
- What are to be the definitions of these categories? What changes or new understandings might be needed and justified at this time?
- What is the link between actual test items and questions/ activities and the meaning of the categories to be used? Are the category definitions supported by the test items and performance activities?
- Do educators find the existing categories and structure beneficial and useful? What of the citizens of the state, are they ready/needing change?
- What about legislative reaction to new labels or new definitions for the categories?
- Can existing or even new labels be readily applied and have meaning to test components as the NRT or the non-academic indicators?

The initial task for this step is for the Board and its advisors to wrestle and resolve questions such as these. Initial decisions addressing and resolving what are to be the Performance Standard categories and their definitions are needed before the cutscore work discussed below can proceed. Of course, it is acceptable

based on review and discussion to limit changes to the categories or their definitions.

Once there is direction from the Board regarding Kentucky's Performance Standards structure and definitions, a methodology suggested to help finalize the performance standards is drawn from recent work and writings by Jaeger and Mills (1999). The approach involves panels of broadly representative educators who are persons of high standing and recognition, working with and on behalf of the Board to review and consider changes to the emerging performance standards and their definitions. This activity will involve the review and consideration of spring 2000 CATS test items as well as the revision to the performance standard categories and definitions, etc. Recommendations from the panels for change will be presented to the Board for action. This phase needs to be completed and affirmed by mid-February 2000. Panels configured for this review of the CATS performance standards and related definitions will be involved only in this step of the process. Steps to follow that also call for educator panels for input, participation, assistance and recommendations shall involve new member so as to create independent panels. While there may be some advantages to carrying panel membership forward, the independence of the panels across successive tasks and affording the broadest representation for input out weigh the continuance of panel members across all activities.

Step [2] Panels carry out the CTB Bookmark cutscore procedure

With the performance standards completed and available, and the testing in spring 2000 with new CATS completed, we recommend that the CTB Bookmark procedure be implemented to begin the process of identification of cutscores for each CATS test at each grade. Panel membership needs to be representative of knowledgeable Kentucky educators in the discipline test under review and a panel should be configured to also included educators from related/connected disciplines and grades. Further, it would be desirable to allow for some across panel membership (shared membership panels). In the Bookmark procedure, panel members review test items on a CATS examinations considering the difficulty of the assessment's items, the importance and appropriateness of items in the examination to reflect the Performance Standards. While undertaking the task, panelists also have access to samples of student work on the examination. Working within a test booklet prepared such that items are ordered based on difficulty (easiest to hardest), the task for the panel member is to identify (i.e., "bookmark") the place in the test booklet where s/he would place a decision point. The process is iterative, which is to say panelists are cycled through the judgment activity up to three times on each occasion being informed as to how others on their panel are judging and recommending decision cutscores. Statistical procedures are then used to yield recommended cutscores for each test. The procedure also allows and encourages panelists to have reaction and input to the form and substance of the Performance Standards themselves.

To implement this procedure requires that the CATS spring 2000 assessments have been administered and have been analyzed and revised as needed to accommodate the procedure. As such this activity cannot be implemented until September and October 2000. Results from this phase then to contribute along with the review and judgment activities of the next step.

Step []3: The second stage of the Jaeger-Mills method is implemented

Newly formed panels but whose membership meets the specifications noted above are to be formed. Whereas the Bookmark procedure relies on the properties of the test items to help guide decisions about cutscores, the second stage of the Jaeger-Mills approach has panelists review the entirety of an examinee's assessment performance in a subject area and then render a judgment regarding the placement of the student's work on the assessment's score scale. Panelists study and review the test items closely, and in addition review the actual work and scores of a broadly representative sample students on the examination. Then each panelist is directed to place each student's assessment performance and work into one of the Kentucky performance categories based on her/his evaluation of the work. The procedure is implemented to insure that panelists review a sufficient sample of students' work, that actual CATS examinations are being reviewed, and finally when categorizing each student's work a more delineated scale (e.g., 12 categories for placement as opposed to four broad categories -- high basic, low proficient, midrange proficient, high proficient, low excellence, etc.) is used. There are opportunities for panelists to adjust their initial judgments as the procedure moves along. Again, documentation is available to assure a standardize implementation

of this methodology. Statistical methods are available to determine the cutscores for an assessment based on differing properties of the data and assumptions.

As with the Bookmark procedure, panelists engaged in the activity of judging student work and performance have an opportunity to suggest changes to the emerging Performance Standards. The information in this regard from both methods is expected to be beneficial to finalizing and elaboration of the state's Performance Standards for each assessment. While we have noted the need for the subject matter/grade level panels to be composed of educators knowledgeable in the subject area and respected individuals, and that they represent diversity and to the extent possible afford some cross membership, the size of the panels themselves is an important consideration. We believe that cost and feasibility also deserve consideration. More participation is preferred but a minimum of 8 to 12 persons per panel need to be involved and preferably 14 to 18 if possible. It would also be beneficial if for a few panel configurations (e.g., at the elementary mathematics, secondary science, etc.), a second and indeed separate panel was held to evaluate the generalizability of the findings and resulting panel recommendations. Panel judgmental procedures, both Bookmark followed by the second stage of Jaeger-Mills, need to be completed by November 2000.

Step [4]: Carry out a field-based empirical contrasting groups standard setting approach

The Jaeger-Mills and Bookmarking methods both rely on educators to identify where a cutscore should be located on the assessment's score scale based upon the panelist's belief or expectation regarding where performance *should* be. We hasten to add that each procedure is configured in a manner that relies on actual student performance as the basis for matching or alignment with the state's performance standard definitions. Both methods are tremendous improvements over procedures of the past that typically asked panelists to estimate how students might be expected to perform on a specific test question. Research has shown that teacher expectations tend to overestimate significantly what students *can* demonstrate on assessments that measure knowledge, skill and capacity. Step 4 is intended to bring into consideration information that directly informs the cutscore setting process given how students actually perform on each specific assessment. The procedure know generically as a contrasting groups approach, and relying on work completed by Poggio (1998), asks teachers to review and study the CATS Performance standards and then, without reference to or knowledge of the student's actual performance on a CATS assessment, but relying on their experience over the course of the year/semester with a student, based on the teacher's professional judgment identify the category in the Performance Standard system to which the student belongs.

As with the other procedures, the method provides instructions to control for spurious effects (classification accuracy, etc.) and potential confounding factors (which students to rate, etc.); statistical procedures are available to guide a determination of the recommended cutscores. Unlike the other approaches that bring together relatively few teachers to provide judgments, this method can be expected to involve instructors in most Kentucky schools and at nominal cost. The method needs to be implemented during the spring 2000 CATS administration and data would be forthcoming in fall 2000. Teachers need to complete the activity concurrent with students being tested, and they can return their judgments on the students' response form to expedite data preparation and analysis.

Step [5]: Recommendations from the three (3) procedures are reviewed and considered by panels along with knowledge of Kentucky student performance on the spring 2000 CATS administrations

With the Bookmark, Jaeger-Mills, and contrasting groups procedures completed, three interrelated sets of cutscores and potentially cutscore ranges, will emerge by late November 2000. From late November through December 2000, recommendations from the three standard setting applications can be examined and reviewed by panels configured for each subject area. Members of these panels would to include some participants from the prior steps as well as individuals "new" to the process. These panels

can be expected to be considerably larger than the previous panels and should include persons from outside education.

The collection of recommended cutscores that result from different methods (again, the methods make very different assumptions regarding where to locate a cutscore) is expected to inform the panels as to the reasonableness of the differing methods, to guide them toward giving more or less weight to particular results, and to establish a framework to consider the information to attach greatest reliance. This step in the review does not mean the results from the methods are averaged or somehow combined into a single index, rather and decidedly, it should lead to decisions regarding which results to follow.

In addition to the results of the independent cutscore studies, also to be made available to the subject area panels will be information regarding how students actually performed on the spring 2000 CATS administrations. Access to these results is an important provision of the process being proposed and is designed to provide a "reality check" toward assisting panels establish their recommendations to the Board. Data from the spring 2000 administration would be configured in differing arrangements (e.g., performance across different test forms, by content areas, by subsets of items associated with the Core Content standards, by school averages, etc.) to inform the discussion of the panels. In this way, the decisions for cutpoints are informed by actual performance of Kentucky students and schools. The expectation is for the panels to make final recommendations to the Board by the end of December 2000.

Step [6] Recommendations for cutscores are studied by the Kentucky State Board of Education and evaluated against NAEP, TIMSS and KIRIS performance standards and expectations

The final recommendations of the panels are to be evaluated by the Board in relation to the performance levels established in other large scale and often comparable programs, specifically the National Assessment of Educational Progress (NAEP), the Third International Mathematics and Science Study (TIMSS), and KIRIS. The intention is to appraise the extent to which Kentucky's potential cutscores, in areas as mathematics, reading, science and writing when comparable grades are tested, measure-up against other programs. As there is no way to compare legitimately whether performance expectations have "changed" from the past (recall *CATS is a different program* and as such a direct comparison is not possible), we can generally ask, where are the recommended cutscore levels on the CATS score scale by comparison to other programs. Such data, mapping of performance standards and patterns can inform policy makers as to the credibility and consequences associated with these new initiatives for assessment and accountability in Kentucky.

We began with a discussion addressing making decisions in complex areas where there is no one absolute truth to be found. The NTAP proposal advises an approach that gathers high quality and diverse, yet complimenting, information and professional opinions through systematic processes to guide a rational and informed choice. With access to all available information and the recommendations of the panels, the Kentucky State Board of Education will be positioned to establish performance standards and decision cutscores on the CATS assessments which will form the foundation for the CATS accountability process.

ATTACHMENT B: Instructional Summaries from Steps 2-4

(Available on request – 8th grade mathematics example provided)

TABLE 5 – MATHEMATICS – GRADE 8 – CTB BOOKMARK				
	NOVICE	**APPRENTICE**	**PROFICIENT**	**DISTINGUISHED**
DRAFT DESCRIPTORS	N-1 Student demonstrates limited understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. N-2 Student attempts to implement strategies for solving problems but may use inappropriate strategies (will not lead to a correct solution). N-3 Student demonstrates a limited understanding of problems as indicated by incomplete or incorrect solutions. N-4 Student rarely or ineffectively uses mathematical terminology and/or representation that are appropriate for 8th grade. N-5 Student uses inappropriate mathematical reasoning or no mathematical reasoning at all.	A-1 Student demonstrates basic or partial understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. A-2 Student attempts to use appropriate strategies (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems some of the time. A-3 Student demonstrates a partial understanding of problems as indicated by correct or complete solutions some of the time. A-4 Student uses some mathematical terminology and/or representations (symbols, graphs, tables, diagrams, models), but terminology/representations may be unclear or misused (e.g., substituting the acronym LCM for GCF). A-5 Student demonstrates appropriate mathematical reasoning some of the time.	P-1 demonstrates understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. P-2 Student accurately uses an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems most of the time. P-3 Student demonstrates a general understanding of problems by providing complete solutions most of the time with possible minor computational errors. P-4 Student uses appropriate and accurate mathematical terminology (e.g., central tendency) and/or representation (symbols, graphs, tables, diagrams, models) effectively. P-5 Student demonstrates appropriate mathematical reasoning but may have gaps (shows the "what" with gaps in "why").	D-1 Student demonstrates a comprehensive understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. D-2 Student consistently implements an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems. D-3 Student demonstrates extensive understanding of problems by providing correct and complete solutions. D-4 Student uses appropriate and accurate mathematical terminology and representations (symbols, graphs, tables, diagrams, models) in a clear and concise manner to communicate a sequential development of the solution. D-5 Student consistently demonstrates appropriate mathematical reasoning (e.g., checking the reasonableness of results for all parts of the problem).
CONTENT	Inverse operations; area by counting and area by formula; uses exponents; read and interpret charts and graphs; graph in all 4 quadrants; extend patterns; perform basic computations; understand scale drawing; show minimal understanding of scatter plot	Understand square root; use estimation; prime numbers; combinations; solve equations by substitution and use variables; calculate percentages; do order of operations; do proportional reasoning; interpret pictographs; use concept of mean, central tendency; use geometry term volume; use congruency; do translations; angle measurement; order rational numbers; do conversions in customary measures	Sampling; use Pythagorean theorem; use distance formula; describe patterns; use area probability; show how change in 1 variable affects change in another; apply coordinate grid concept to reflections; understand probability; solve algebraic inequalities; apply percent of discount	Scientific notation; box and whiskers plot with outliers; apply properties of operations; find slope and y intercept; subdivide shapes; find area of a circle; find relationship of rational numbers
COGNITIVE	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication; can draw simple conclusions	Recognizes faulty reasoning; draws conclusions but offers incomplete justifications; recognizes unnecessary information; basic use of abstract thinking; explains how a pattern works; justifies reasoning; justifies conclusions; recognizes irregular patterns; performs accurate computation	Uses appropriate labels, employs critical reading; communicates clear explanations, demonstrates complete understanding; uses communicative terminology.

TABLE 5 – MATHEMATICS – GRADE 8 – JAEGER MILLS				
	NOVICE	**APPRENTICE**	**PROFICIENT**	**DISTINGUISHED**
DRAFT DESCRIPTORS	N-1 Student demonstrates limited understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. N-2 Student attempts to implement strategies for solving problems but may use inappropriate strategies (will not lead to a correct solution). N-3 Student demonstrates a limited understanding of problems as indicated by incomplete or incorrect solutions. N-4 Student rarely or ineffectively uses mathematical terminology and/or representation that are appropriate for 8th grade. N-5 Student uses inappropriate mathematical reasoning or no mathematical reasoning at all.	A-1 Student demonstrates basic or partial understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. A-2 Student attempts to use appropriate strategies (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems some of the time. A-3 Student demonstrates a partial understanding of problems as indicated by correct or complete solutions some of the time. A-4 Student uses some mathematical terminology and/or representations (symbols, graphs, tables, diagrams, models), but terminology/representations may be unclear or misused (e.g., substituting the acronym LCM for GCF). A-5 Student demonstrates appropriate mathematical reasoning some of the time.	P-1 demonstrates understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. P-2 Student accurately uses an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems most of the time. P-3 Student demonstrates a general understanding of problems by providing complete solutions most of the time with possible minor computational errors. P-4 Student uses appropriate and accurate mathematical terminology (e.g., central tendency) and/or representation (symbols, graphs, tables, diagrams, models) effectively. P-5 Student demonstrates appropriate mathematical reasoning but may have gaps (shows the "what" with gaps in "why").	D-1 Student demonstrates a comprehensive understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. D-2 Student consistently implements an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems. D-3 Student demonstrates extensive understanding of problems by providing correct and complete solutions. D-4 Student uses appropriate and accurate mathematical terminology and representations (symbols, graphs, tables, diagrams, models) in a clear and concise manner to communicate a sequential development of the solution. D-5 Student consistently demonstrates appropriate mathematical reasoning (e.g., checking the reasonableness of results for all parts of the problem).
CONTENT	Inverse operations; area by counting and area by formula; uses exponents; read and interpret charts and graphs; graph in all 4 quadrants; extend patterns; perform basic computations; understand scale drawing; show minimal understanding of scatter plot; understand square root; use estimation	Prime numbers; combinations; solve equations by substitution and use variables; calculate percentages; do order of operations; do proportional reasoning; interpret pictographs; use concept of mean, central tendency; use geometry term volume; use congruency; do transformations	Use Pythagorean theorem; use distance formula; describe patterns; use area probability; show how change in 1 variable affects change in another; apply coordinate grid concept to reflections; understand probability	Algebraic inequalities; apply percent of discount; scientific notation; box and whiskers plot with outliers; apply properties of operations; find slope and y intercept; subdivide shapes; find area of a circle; find relationship of rational numbers
COGNITIVE	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication; can interpret written questions and apply to diagrams	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication; can interpret written questions and apply to diagrams; some mathematical communication skill; able to do some operations with fractions and negatives; basic skills with variables and proportions; some basic skill with symbols and terminology; can organize a multi-step word problem; recognizes faulty reasoning	Draws conclusions but offers incomplete justifications; recognizes unnecessary information; basic use of abstract thinking; explains how a pattern works; justifies reasoning; justifies conclusions; recognizes irregular patterns	Performs accurate computation; uses appropriate labels, employs critical reading; communicates clear explanations, demonstrates complete understanding; uses communicative terminology.

TABLE 5 – MATHEMATICS – GRADE 8 – CONTRASTING GROUPS				
	NOVICE	**APPRENTICE**	**PROFICIENT**	**DISTINGUISHED**
DRAFT DESCRIPTORS	N-1 Student demonstrates limited understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. N-2 Student attempts to implement strategies for solving problems but may use inappropriate strategies (will not lead to a correct solution). N-3 Student demonstrates a limited understanding of problems as indicated by incomplete or incorrect solutions. N-4 Student rarely or ineffectively uses mathematical terminology and/or representation that are appropriate for 8th grade. N-5 Student uses inappropriate mathematical reasoning or no mathematical reasoning at all.	A-1 Student demonstrates basic or partial understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. A-2 Student attempts to use appropriate strategies (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems some of the time. A-3 Student demonstrates a partial understanding of problems as indicated by correct or complete solutions some of the time. A-4 Student uses some mathematical terminology and/or representations (symbols, graphs, tables, diagrams, models), but terminology/representations may be unclear or misused (e.g., substituting the acronym LCM for GCF). A-5 Student demonstrates appropriate mathematical reasoning some of the time.	P-1 demonstrates understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. P-2 Student accurately uses an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems most of the time. P-3 Student demonstrates a general understanding of problems by providing complete solutions most of the time with possible minor computational errors. P-4 Student uses appropriate and accurate mathematical terminology (e.g., central tendency) and/or representation (symbols, graphs, tables, diagrams, models) effectively. P-5 Student demonstrates appropriate mathematical reasoning but may have gaps (shows the "what" with gaps in "why").	D-1 Student demonstrates a comprehensive understanding of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content. D-2 Student consistently implements an appropriate strategy (e.g., making a table, a diagram, guess and check, or working a simpler problem) to solve problems. D-3 Student demonstrates extensive understanding of problems by providing correct and complete solutions. D-4 Student uses appropriate and accurate mathematical terminology and representations (symbols, graphs, tables, diagrams, models) in a clear and concise manner to communicate a sequential development of the solution. D-5 Student consistently demonstrates appropriate mathematical reasoning (e.g., checking the reasonableness of results for all parts of the problem).
CONTENT	Inverse operations; area by counting and area by formula; uses exponents; read and interpret charts and graphs; graph in all 4 quadrants; extend patterns; perform basic computations; understand scale drawing; show minimal understanding of scatter plot; understand square root; use estimation	Prime numbers; combinations; solve equations by substitution and use variables; calculate percentages; do order of operations; do proportional reasoning; interpret pictographs; use concept of mean, central tendency; use geometry term volume; use congruency; do translations	Angle measurement; order rational numbers; do conversions in customary measures; sampling; use Pythagorean theorem; use distance formula; describe patterns	Use area probability; show how change in 1 variable affects change in another; apply coordinate grid concept to reflections; understand probability; solve algebraic inequalities; apply percent of discount; scientific notation; box and whiskers plot with outliers; apply properties of operations; find slope and y intercept; subdivide shapes; find area of a circle; find relationship of rational numbers
COGNITIVE	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication; can interpret written questions and apply to diagrams	Able to enter complex problems; trouble with more than one step problems; limited interpretive skill; limited knowledge of math terminology; minimal written communication; can interpret written questions and apply to diagrams; some mathematical communication skill; able to do some operations with fractions and negatives; basic skills with variables and proportions; some basic skill with symbols and terminology; can organize a multi-step word problem	Draws simple conclusions; recognizes faulty reasoning; draws conclusions but offers incomplete justifications; recognizes unnecessary information; basic use of abstract thinking; explains how a pattern works; justifies reasoning; justifies conclusions; recognizes irregular patterns; performs accurate computation	Justifies reasoning; justifies conclusions; recognizes irregular patterns; performs accurate computation; uses appropriate labels, employs critical reading; communicates clear explanations, demonstrates complete understanding; uses communicative terminology.

ATTACHMENT C: NAEP Standards and Distributions of Students Across Standards

CONTENT	GRADE	PERFORMANCE LEVEL	% STUDENTS AT LEVEL	YEAR OF NAEP ADMINISTRATION
READING	4th	Below Basic	38	1998
		Basic	31	
		Proficient	24	
		Advanced	7	
	8th	Below Basic	26	
		Basic	41	
		Proficient	30	
		Advanced	3	
	12th	Below Basic	23	
		Basic	37	
		Proficient	34	
		Advanced	6	

MATHEMATICS	4th	Below Basic	36	1996
		Basic	43	
		Proficient	19	
		Advanced	2	
	8th	Below Basic	38	
		Basic	38	
		Proficient	20	
		Advanced	4	
	12th	Below Basic	31	
		Basic	53	
		Proficient	14	
		Advanced	2	

CONTENT	GRADE	PERFORMANCE LEVEL	% STUDENTS AT LEVEL	YEAR OF NAEP ADMINISTRATION
SCIENCE	4th	Below Basic	33	1996
		Basic	38	
		Proficient	26	
		Advanced	3	
	8th	Below Basic	39	
		Basic	32	
		Proficient	26	
		Advanced	3	
	12th	Below Basic	43	
		Basic	36	
		Proficient	18	
		Advanced	3	

WRITING	4th	Below Basic	16	1998
		Basic	61	
		Proficient	22	
		Advanced	1	
	8th	Below Basic	16	
		Basic	57	
		Proficient	26	
		Advanced	1	
	12th	Below Basic	22	
		Basic	56	
		Proficient	21	
		Advanced	1	

CONTENT	GRADE	PERFORMANCE LEVEL	% STUDENTS AT LEVEL	YEAR OF NAEP ADMINISTRATION
U.S. HISTORY	4th	Below Basic	36	1994
		Basic	47	
		Proficient	15	
		Advanced	2	
	8th	Below Basic	39	
		Basic	47	
		Proficient	13	
		Advanced	1	
	12th	Below Basic	57	
		Basic	32	
		Proficient	10	
		Advanced	1	
GEOGRAPHY	4th	Below Basic	30	1994

		Basic	48
		Proficient	19
		Advanced	3
	8th	Below Basic	29
		Basic	43
		Proficient	24
		Advanced	4
	12th	Below Basic	30
		Basic	43
		Proficient	25
		Advanced	2

CONTENT	GRADE	PERFORMANCE LEVEL	% STUDENTS AT LEVEL	YEAR OF NAEP ADMINISTRATION
CIVICS	4th	Below Basic	31	1998
		Basic	46	
		Proficient	21	
		Advanced	2	
	8th	Below Basic	30	
		Basic	48	
		Proficient	20	
		Advanced	2	
	12th	Below Basic	35	
		Basic	39	
		Proficient	22	
		Advanced	4	

Step 5: Results of Teacher's Evaluation of Step 5: Synthesis

The teachers who participated in the Step 5: synthesis process were asked to rate their level of agreement or disagreement with each of 12 statements. The 5-point scale ranged from strong disagreement (1) to strong agreement (5). The ratings given to the 12 statements ranged from 4.0 to 4.80 indicating a high level of agreement with the statements.

The highest level of agreement was to the statement that "participating in the Step 5 process increased my understanding of the importance of setting the standards." The teachers thought that the facilitator helped them express their ideas, that the goals for the process were clear and that the process was fair. They thought that the process was well described and that the explanations of the work to be done in each session were clear. They had a high degree of confidence with the standards they had the opportunity to help recommend. They agreed that the review process provided them with sufficient opportunity to explain their selected cut scores to the Kentucky Board of Education. Although they would have liked more materials to be available and to have more data available in making their decision, they were in agreement that adequate materials and sufficient data were available to accomplish the work and make a satisfactory decision.

Statement	Mean Rating
Participating in the Step 5 process increased my understanding of the importance of setting the standards.	4.80
The facilitator helped me to express my ideas.	4.78
The goals for this process were clear.	4.63
I felt that the process was fair.	4.59
The Standard Setting Step 5 process was well described.	4.57
Explanations of the work to be done in each session were clear.	4.57
I have high degree of confidence with the standards I had the opportunity to help recommend.	4.55
The review process provided sufficient opportunity to explain our selected cut scores to the Kentucky Board of Education.	4.55
The materials provided were helpful.	4.48
The facilities were adequate.	4.16
Adequate materials were available to accomplish the work of each session.	4.14
Sufficient data were available to make a satisfactory decision.	4.00

MEAN OF MEANS Grade 4 Reading

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	183	115	10	0	308
Apprentice	62	199	62	2	325
Proficient	8	117	88	7	220
Distinguished	1	41	76	28	146
Total	254	472	236	37	999

Exact	50%
Adjacent	44%
Total	94%

MEAN OF MEANS Grade 7 Reading

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	238	111	7	0	356
Apprentice	69	256	88	5	418
Proficient	13	126	140	18	297
Distinguished	0	36	93	56	185
Total	320	529	328	79	1256

Exact	55%
Adjacent	40%
Total	95%

MEAN OF MEANS Grade 10 Reading

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	81	65	9	0	155
Apprentice	33	139	89	15	276
Proficient	3	67	117	18	205
Distinguished	0	18	113	57	188
Total	117	289	328	90	824

Exact	48%
Adjacent	47%
Total	95%

MEAN OF MEANS Grade 5 Math

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	217	88	13	2	320
Apprentice	81	177	97	11	366
Proficient	10	98	117	33	258
Distinguished	3	33	109	87	232
Total	311	396	336	133	1176

Exact	51%
Adjacent	43%
Total	94%

MEAN OF MEANS Grade 8 Math

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	60	59	7	1	127
Apprentice	20	116	75	11	222
Proficient	5	77	139	70	291
Distinguished	0	13	99	194	306
Total	85	265	320	276	946

Exact	54%
Adjacent	42%
Total	96%

MEAN OF MEANS Grade 11 Math

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	113	55	9	2	179
Apprentice	40	125	62	5	232
Proficient	3	69	108	19	199
Distinguished	0	20	85	68	173
Total	156	269	264	94	783

Exact	53%
Adjacent	42%
Total	95%

MEAN OF MEANS 4 Science

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	194	76	12	0	282
Apprentice	80	192	58	4	334
Proficient	17	95	78	8	198
Distinguished	3	29	72	22	126
Total	294	392	220	34	940

Exact	52%
Adjacent	41%
Total	93%

MEAN OF MEANS 7 Science

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	309	330	164	17	820
Apprentice	2	48	64	27	141
Proficient	0	2	12	5	19
Distinguished	0	3	7	3	13
Total	311	383	247	52	993

Exact	37%
Adjacent	41%
Total	79%

MEAN OF MEANS 11 Science

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	66	129	14	1	210
Apprentice	41	125	65	2	233
Proficient	9	109	125	14	257
Distinguished	1	22	86	38	147
Total	117	385	290	55	847

Exact	42%
Adjacent	52%
Total	94%

MEAN OF MEANS Grade 5 Social Studies

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	203	93	10	0	306
Apprentice	88	163	77	11	339
Proficient	21	88	76	20	205
Distinguished	5	38	103	54	200
Total	317	382	266	85	1050

Exact	47%
Adjacent	45%
Total	92%

MEAN OF MEANS Grade 8 Social Studies

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	140	115	10	0	265
Apprentice	46	223	86	6	361
Proficient	7	104	127	25	263
Distinguished	0	30	78	44	152
Total	193	472	301	75	1041

Exact	51%
Adjacent	44%
Total	95%

MEAN OF MEANS Grade 11 Social Studies

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	102	81	4	1	188
Apprentice	42	130	69	5	246
Proficient	3	73	143	25	244
Distinguished	0	12	97	53	162
Total	147	296	313	84	840

Exact	51%
Adjacent	46%
Total	97%

MEAN OF MEANS Grade 5 Arts and Humanities

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	256	115	41	5	417
Apprentice	84	120	60	11	275
Proficient	30	61	48	14	153
Distinguished	13	68	91	20	192
Total	383	364	240	50	1037

Exact	43%
Adjacent	41%
Total	84%

MEAN OF MEANS Grade 8 Arts and Humanities

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	224	98	42	15	379
Apprentice	80	110	56	15	261
Proficient	29	56	49	25	159
Distinguished	20	45	104	52	221
Total	353	309	251	107	1020

Exact	43%
Adjacent	41%
Total	84%

MEAN OF MEANS Grade 11 Arts and Humanities

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	70	49	12	2	133
Apprentice	39	50	40	4	133
Proficient	11	50	96	13	170
Distinguished	2	7	39	27	75
Total	122	156	187	46	511

Exact	48%
Adjacent	45%
Total	93%

MEAN OF MEANS Grade 5 PL / VS

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	165	143	32	3	343
Apprentice	47	152	74	9	282
Proficient	19	87	75	13	194
Distinguished	11	59	75	28	173
Total	242	441	256	53	992

Exact	42%
Adjacent	44%
Total	87%

MEAN OF MEANS Grade 8 PL / VS

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	163	90	45	8	306
Apprentice	51	95	53	23	222
Proficient	27	60	68	25	180
Distinguished	9	46	72	50	177
Total	250	291	238	106	885

Exact	42%
Adjacent	40%
Total	82%

MEAN OF MEANS Grade 10 PL / VS

Student Achieved Performance	Teacher Assigned Contrasting Group Score				
	Novice	Apprentice	Proficient	Distinguished	Total
Novice	124	111	32	1	268
Apprentice	49	75	62	6	192
Proficient	18	66	88	15	187
Distinguished	4	38	79	26	147
Total	195	290	261	48	794

Exact	39%
Adjacent	48%
Total	88%

ATTACHMENT I: Novice, Apprentice, Proficient, and Distinguished Performance Level Descriptions

Tables:

READING

MATHEMATICS

SCIENCE

SOCIAL STUDIES

ARTS & HUMANITIES

PRACTICAL LIVING / VOCATIONAL STUDIES

GRADE 4 READING (No Step 5 Changes)				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Text	**Student demonstrates in-depth knowledge of the text, including inferential as well as literal information.** **Evaluates main ideas and supports those ideas with organized, accurate, clear details** **Provides extensive evidence of constructing meaning** **In-depth interpretation of inferential and literal detail from a variety of reading passages** **Effectively follows text sequence or progression of ideas** Accurately draws conclusions from text information	**Student demonstrates overall knowledge of the text, including some inferential as well as literal information.** **Recognizes main ideas and supports those ideas with accurate, clear details** **Provides adequate evidence of constructing meaning** **Recall of inferential and literal detail from a variety of reading passages** **Follows text sequence or progression of ideas** **Draws conclusions from text information**	**Student demonstrates literal knowledge of the text, including some interpretations.** **Recognizes main ideas and supports those ideas with some details** **Demonstrates some evidence of constructing meaning** **Recalls literal detail from a variety of reading passages** **Follows obvious text sequence or progression of ideas** **Draws some conclusions from text information**	**Student demonstrates minimal and/or incorrect knowledge of the text.** **Limited awareness of main ideas and inadequate details to support ideas.** **Minimal evidence of constructing meaning** **Inconsistent recall of inferential and literal detail from a variety of reading passages** **Incorrect recognition of text sequence or progression of ideas.** Incorrect conclusions drawn from text information
Analysis	**Student analyzes information accurately to solve the problem, evaluate the situation, or draw conclusions.** **Demonstrates comprehensive knowledge of word meaning, word identification strategies, and an understanding of textual features** **Identifies the problem, selects information and evaluates the solution.** Thoroughly supports response with relevant, explicit, text-based information	**Student applies information appropriately to solve the problem, analyze the situation, and or draw conclusions.** **Demonstrates knowledge of word meaning, word identification strategies, and an understanding of textual features** **Identifies the problem, selects information, and describes the solution.** **Supports response with relevant, explicit, text-based information**	**Student applies information that partially solves the problem, describes the situation, or draws weak conclusions.** **Demonstrates basic knowledge of word meaning and word identification strategies, and an understanding of textural features.** **Identifies the problem, selects information and makes a partial solution** Supports response with short answers using some information and detail from the text	**Student applies information ineffectively in an attempt to solve the problem, to recognize the situation, and/or to draw a conclusion.** **Demonstrates limited knowledge of word meaning, word identification strategies, and an understanding of textual features** **Ineffectively identifies problem/solution** No text based information to support response
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	NOVICE

Understanding	**Student demonstrates extensive understanding of literary, informational, persuasive and practical/ workplace texts.** **Demonstrates an extensive understanding of literary elements (e.g., setting, characters, plot, and problem/solution) when reading literary text** **Demonstrates an extensive understanding of text features (e.g., lists, tables, graphs, etc.) when reading informational text** **Demonstrates an extensive understanding of fact and the author's opinion when reading persuasive text** Demonstrates an extensive understanding of text (e.g., locating and applying information for authentic purposes, interpreting specialized vocabulary, and following directions) when reading practical/workplace text	**Student demonstrates an overall understanding of literary, informational, persuasive and practical workplace texts.** **Demonstrates a developed understanding of literary elements (e.g., setting, characters, plot, and problem/solution) when reading literary text** **Demonstrates a developed understanding of text features (e.g., lists, tables, graphs, etc.) when reading informational text** **Demonstrates a developed understanding of fact and author's opinion when reading persuasive text.** Demonstrates a developed understanding of text (e.g., locating and applying information for authentic purposes, interpreting specialized vocabulary, and following directions) when reading practical/workplace text	**Student demonstrates some understanding of literary, informational, persuasive and practical/workplace texts.** **Demonstrates some understanding of literary elements (e.g., setting, characters, plot, and problem/solution) when reading literary text** **Demonstrates some understanding of text features (e.g., lists, tables, graphs, etc.) when reading informational texts.** **Demonstrates some understanding of fact and author's opinion when reading persuasive text.** Demonstrates some understanding of text (e.g., locating and applying information for authentic purposes, interpreting specialized vocabulary, and following directions) when reading practical/workplace text	**Student demonstrates minimal understanding of literary, informational, persuasive, and practical/ workplace texts.** **Demonstrates a minimal understanding of literary elements (e.g., setting, characters, plot, and problem/solution) when reading literary text** **Demonstrates a minimal understanding of text features (e.g., lists, tables, graphs, etc.) when reading informational text** **Demonstrates a minimal understanding of fact/opinion and author's opinion when reading persuasive text** Demonstrates a minimal understanding of text (e.g., locating and applying information for authentic purposes, interpreting specialized vocabulary, and following directions) when reading
Reasoning	**Student demonstrates some insightful, accurate, comprehensive reasoning support-ed by detailed evidence from the text (e.g. analysis, reflection, synthesis, and evaluation).**	**Student demonstrates clear and accurate communication skills supported with sufficient details and/or examples from the text.**	**Student demonstrates some reasoning with limited support/details from the text.**	**Student demonstrates little or no reasoning skills and response lacks relevance and detail.**

	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	NOVICE
Reasoning (con't)	**Completely understanding and following complex directions** **Interpreting the author's point of view and purpose.** **Locating and evaluating relevant information.** **Analyzing sequence and multiple details to effectively answer the question.**	**Understanding and following directions** **Recognizing the author's point of view and purpose** **Locating relevant information** **Identifying sequence and several details to adequately answer the question**	**Some understanding and evidence of following directions** **Beginning to recognize the author's point of view and purpose** **Locating some relevant information with limited details** **Limited identification of sequence and few details to adequately answer the question.**	**Little understanding and /or inadequately following directions** **Not recognizing the author's point of view and purpose** **Locating little or no relevant information** **Incorrectly identifying sequence and providing minimal details to answer the question.**
Connections	**Student makes and justifies insightful connections between text and prior knowledge and real world issues.** **Establishes and adjusts the purpose for reading different types of text** **Makes insightful connections and extensions between their ideas and the text** Accurately differentiates distinctive features among printed material	**Student makes clear connections between text, prior knowledge, and/or real world issues.** **Identifies the purpose of different types of text** **Makes clear connections and extensions between their ideas and the text** **Differentiates features among printed material**	**Student demonstrates some connections between text, prior knowledge, and/or real world.** **Limited ability to identify the purposes of different types of text** **Limited connections and extensions between their ideas and the text** Beginning to differentiate features among printed material.	**Student demonstrates minimal connections between text, prior knowledge, and/or real world issues.** **Inability to identify the purpose of different types of text** **Minimal connection and extension between their ideas and text** Inability to differentiate features among printed material

GRADE 7 READING (Jaeger-Mills Changes Should be Considered. They have been inserted.) (Recommended that descriptors be written with vocabulary consistent with the Core Content.)				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Text	**Student demonstrates in-depth knowledge of the text, including inferential as well as literal information. Provides in-depth explanation of the literal and inferential meaning of a passage taken from text appropriate for middle level students** Uses multiple word attack skills such as applying meanings of common prefixes and suffixes, knowledge of synonyms, antonyms, and homonyms, and multiple word meanings to aid in comprehending text	**Student demonstrates overall knowledge of the text, including some inferential as well as literal information. Explains the literal and some inferential meaning of a passage taken from text appropriate for middle level students** Effectively uses word attack skills such as applying meanings of common prefixes and suffixes, knowledge of synonyms, antonyms, and homonyms, and multiple word meanings to aid in comprehending text	**Student demonstrates literal knowledge of the text, including some interpretations. Explains the literal meaning of a passage taken from text appropriate for middle level students** Uses some word attack skills such as applying meanings of common prefixes and suffixes and basic knowledge of synonyms, antonyms, and homonyms, and multiple word meanings to aid in comprehending text in some situations.	**Student demonstrates minimal and/or incorrect knowledge of the text. Minimal or incorrect explanation of the literal meaning of a passage taken from text appropriate for middle level students** Incorrect use of word attack skills such as applying meanings of common prefixes and suffixes, and minimal knowledge of synonyms, antonyms, homonyms, and multiple word meanings to aid in comprehending text
Analysis	**Student analyzes information accurately to evaluate the situation, or draw conclusions. Makes insightful predictions, draws and evaluates conclusions, and makes in-depth generalizations about what is read Selectively uses a variety of strategies such as skimming, scanning, and formulating questions in multiple contexts Analyzes the situation and effectively locates and applies information for a specific purpose (e. g. following directions, completing a task)** Accurately identifies the sequence of activities needed to carry out a procedure in an efficient manner	**Student applies information appropriately to analyze the situation, and/or draw conclusions. Effectively makes predictions, draws conclusions, and makes generalizations about what is read Appropriately uses a variety of strategies such as skimming, scanning, and formulating questions Effectively locates and applies information for a specific purpose (e. g. following directions, completing a task) Accurately identifies the sequence of activities needed to carry out a procedure.**	**Student applies information that partially describes the situation, or draws weak conclusions. Makes obvious predictions, draws weak conclusions, and makes basic generalizations about what is read Uses some strategies such as skimming, scanning, and formulating questions Locates and applies some information for a specific purpose (e. g. following directions, completing a task) in some situations** Identifies some of the sequence of activities needed to carry out a procedure	**Student applies information ineffectively in an attempt to recognize the situation, and/or to draw a conclusion. Makes minimal predictions, draws limited conclusions, and makes poor generalizations about what is read Inappropriately uses strategies such as skimming, scanning, and formulating questions Ineffectively locates and incorrectly applies information for a specific purpose (e.g. following directions, completing a task)** Incorrectly identifies the sequence of activities needed to carry out a procedure

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Understanding	**Student demonstrates extensive understanding of literary, informational, persuasive and practical/workplace texts.** **When reading literary text, student correctly identifies and analyzes the author's purpose, evaluates literary elements (e.g. characterization, setting, plot) and characteristics of literary genres, provides in-depth analysis of the relationships between events in a story and a character's behavior, analyzes conflict resolution, and evaluates literary devices such as foreshadowing, imagery and figurative language (e. g. simile, metaphor)** **When reading informational or practical/workplace text, student accurately identifies and analyzes the author's purpose and uses text features (e. g. lists, indices, headings, pictures) and organizational patterns insightfully (cause and effect, comparison/contrast, sequence)** When reading persuasive text, student correctly identifies and analyzes the author's purpose and evaluates commonly used persuasive techniques (e.g. expert opinion, testimonial, bandwagon)	**Student demonstrates a broad understanding of literary, informational, persuasive, and practical/workplace texts.** **When reading literary text, student correctly identifies author's purpose, describes literary elements (e.g., characterization, setting, plot), identifies characteristics of literary genres, analyzes relationships between events in a story and a character's behavior, explains conflict resolution, and identifies literary devices such as foreshadowing, imagery and figurative language (e. g. simile, metaphor)** **When reading informational or practical/workplace text, student accurately identifies author's purpose, uses text features (e. g. lists, indexes, headings, pictures) and organizational patterns (cause and effect, comparison/contrast, sequence)** When reading persuasive text, student correctly identifies author's purpose and identifies commonly used persuasive techniques (e.g. expert opinion, testimonial, bandwagon)	**Student demonstrates some understanding of literary, informational, persuasive and practical/workplace texts.** **When reading literary text, student responds with some accuracy in identifying author's purpose, describing literary elements (e.g. characterization, setting, plot), identifying characteristics of literary genres, analyzing relationships between events in a story and a character's behavior, explaining conflict resolution, and identifying literary devices such as foreshadowing, imagery, and figurative language (e. g. simile, metaphor)** **When reading informational or practical/workplace text, student responds with some accuracy in identifying author's purpose and using some text features (e. g. lists, indexes, headings, pictures) and organizational patterns (cause and effect, comparison/contrast, sequence)** When reading persuasive text, student responds with some accuracy in identifying author's purpose and using some commonly identified persuasive techniques (e.g. expert opinion, testimonial, bandwagon)	**Student demonstrates minimal understanding of literary, informational, persuasive, and practical/workplace texts.** **When reading literary text, student inaccurately: identifies author's purpose, describes literary elements (e.g. characterization, setting, plot), identifies characteristics of literary genres, analyzes relationships between events in a story and a character's behavior, explains conflict resolution, and identifies literary devices such as foreshadowing, imagery, and figurative language (e. g. simile, metaphor)** **When reading informational or practical/workplace text, student inaccurately identifies author's purpose and makes minimal use of text features (e. g. lists, indexes, headings, pictures) and organizational patterns (cause and effect, comparison/contrast, sequence)** When reading persuasive text, student inaccurately identifies author's purpose and minimally uses some commonly identified persuasive techniques (e.g. expert opinion, testimonial, bandwagon)

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Reasoning	**Student demonstrates insightful accurate, comprehensive reasoning supported by detailed evidence from the text (e.g. analysis, reflection, synthesis, evaluation).** **Effectively analyzes and evaluates supporting details and justifies their importance** Summarizes information in a clear, succinct manner, identifies bias and/or misinformation and reflects on/evaluates its purpose, distinguishes between subtle fact and opinion, and analyzes the effectiveness of arguments and supporting evidence	**Student demonstrates clear and accurate reasoning skills supported with sufficient details and/or examples from the text.** **Effectively identifies supporting details and explains their importance** Effectively summarizes information, identifies bias and/or misinformation, distinguishes between fact and opinion, and identifies arguments and supporting evidence	**Student demonstrates some reasoning with limited support/details from the text.** **Identifies obvious supporting details and basically explains their importance** Summarizes information ineffectively, identifies some bias and/or misinformation, distinguishes between obvious fact and opinion, and identifies some arguments and supporting evidence	**Student demonstrates little or no reasoning and response lacks relevance and detail.** **Incorrectly identifies obvious supporting details and minimally explains their importance** Provides a limited summary of information, incorrectly identifies bias and/or misinformation, inaccurately distinguishes obvious fact and opinion, and minimally identifies some arguments and supporting evidence
Connections	**Student makes and justifies insightful connections between text and the student's life and/or real world issues.** **Provides insightful reflection and evaluation of what is read** **Integrates information from text to student's life and/or real world issues**	**Student makes clear connections between text, the student's life, and/or real world issues.** **Effectively reflects on and evaluates what is read** **Effectively connects information from text to student's life and/or real world issues**	**Student demonstrates some connections between text, the student's life, and/or real World issues.** **Some reflection and evaluation of what is read** **Some connection of information from text to student's life and/or real world issues**	**Student demonstrates minimal connections between text, the student's life, and/or real world issues.** **Limited reflection and evaluation of what is read** **Minimal connection of information from text to student's life and/or real world issues**

GRADE 10 READING				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Text	**Student demonstrates in-depth knowledge of the text, including literal and non-literal meaning in literary, informational, persuasive, and practical/ workplace texts.** Interprets and evaluates the use of concrete and abstract terms in context Thoroughly interprets the meaning of a passage Concisely and clearly paraphrases important parts of a passage Identifies persuasive techniques and evaluates purposes of persuasion Evaluates the use of specialized vocabulary	**Student demonstrates overall knowledge of the text, including literal and non-literal meaning in literary, informational, persuasive, and practical/ workplace texts.** Interprets concrete and abstract terms in context Interprets the meaning of a passage Paraphrases important parts of a passage Identifies and partially analyzes persuasive techniques and purposes of persuasion Interprets the meaning of specialized vocabulary Eliminates Distracters	**Student demonstrates some knowledge of the text, including literal and non-literal meaning in literary, informational, persuasive, and practical/workplace texts.** Interprets concrete terms and identifies abstract terms in context Partially interprets the meaning of a passage (Opinion not necessarily based on evidence from text.) Summarizes passage Partially paraphrases some parts of a passage Identifies use of persuasion with or without naming the technique Interprets the meaning of some specialized vocabulary	**Student demonstrates minimal and/or incorrect knowledge of the text, including literal and non-literal meaning in literary, informational, persuasive, and practical/workplace texts.** Identifies concrete terms in context Confuses or misinterprets the meaning of a passage Partially summarizes passage Identifies simplistic persuasive techniques with or without naming the technique Confuses or misinterprets the meaning of some specialized vocabulary
Analysis	**Student analyzes information accurately and in depth to solve problems, evaluate situations, draw conclusions, evaluate arguments, and/or formulate opinions.** Evaluates information for a realistic purpose Consistently makes, confirms, or revises insightful and perceptive predictions	**Student applies information appropriately to solve problems, analyze situations, draw conclusions, identify arguments, and/or formulate opinions.** Locates, analyzes, applies information for a realistic purpose Makes, confirms, or revises predictions	**Student applies basic information to solve problems, analyze situations, draw conclusions, identify arguments, and/or formulate opinions.** Locates and applies information for a realistic purpose Makes and confirms predictions	**Student uses basic information to identify problems and/or arguments contained within text.** Locates information Makes predictions

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Understanding	**Student demonstrates a thorough understanding of literary techniques (such as symbolism, irony), formatting and organizational patterns, and/or persuasive techniques.** Thoroughly analyzes the effect of literary techniques Evaluates the use of text features and organizational patterns to enhance understanding Evaluates a variety of persuasive and propaganda techniques to enhance understanding Evaluates the uses of page format and layout in conveying information	**Student demonstrates a broad understanding of literary techniques (such as irony, figurative language), formatting and organizational patterns, and/or persuasive techniques.** Analyzes the effect of literary techniques Recognizes the use of text features and organizational patterns to enhance understanding Identifies and partially analyzes a variety of persuasive and propaganda techniques Uses page format and layout to interpret information	**Student demonstrates a basic understanding of literary techniques (such as conflict/resolution, figurative language), formatting and basic organizational patterns, and/or some persuasive techniques.** Identifies (with some interpretation) literary techniques Recognizes the use of some text features and organizational patterns Identifies some persuasive and propaganda techniques Recognizes page format and layout	**Student demonstrates a limited understanding of literary techniques (such as conflict, simplistic figurative language), formatting and basic organizational patterns, and/or some obvious persuasive techniques.** Identifies obvious literary techniques Recognizes the use of superficial text features and simplistic organizational patterns Identifies obvious persuasive techniques Recognizes superficial page format and layout Draws obvious conclusions
Communications	**Student demonstrates effective communication skills supported with insightful, relevant details and/or examples from the text.** Clearly explains the process in which the conflict is resolved Analyzes arguments giving appropriate supporting details Evaluates and justifies the essential information needed to accomplish a task	**Student demonstrates clear and accurate communication skills supported with appropriate, sufficient details and/or examples from the text.** Explains the process in which the conflict is resolved Accepts or rejects an argument giving appropriate supporting details Identifies and analyzes essential information needed to accomplish a task	**Student demonstrates communication skills supported with some details and/or examples from the text.** Identifies the conflict and resolution in a passage Accepts or rejects an argument giving some support Identifies (with partial interpretation) some information needed to accomplish a task	**Student demonstrates communication skills supported with minimal details and/or examples from the text.** Identifies the conflict in a passage Accepts or rejects an argument giving minimal support Identifies limited information needed to accomplish a task

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Connections	**Student makes and justifies connections between text, prior knowledge, and/or real-world issues. Student extends ideas in the text and evaluates the usefulness of text information by making connections to his/her own experiences and other readings.** Evaluates differing points of view in two or more passages and justifies the stronger Thoroughly analyzes content as it applies to students' lives and real-world issues	**Student makes clear connections between text, prior knowledge, and/or real-world issues. Student extends ideas in the text and analyzes the usefulness of text information by making connections to his/her own experiences and other readings.** Compares and contrasts differing points of view in two or more passages Analyzes content as it applies to students' lives and real-world issues	**Student makes connections between text, prior knowledge, and/or real-world issues.** Compares differing points of view in two or more passages Recognizes the connection of content to students' lives and real-world issues	**Student makes minimal connections between text, prior knowledge, and/or real-world issues.** Identifies differing points of view in two or more passages Recognizes obvious connection of content to students' lives

GRADE 5 MATHEMATICS				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Skills, Concepts and Relationships	Student demonstrates comprehensive understanding of 5th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as stated on Kentucky Core Content.	Student demonstrates understanding of 5th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as stated on Kentucky Core Content most of the time.	Student demonstrates understanding of 5th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as stated on Kentucky Core Content some of the time.	Student rarely demonstrates understanding of 5th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as stated on Kentucky Core Content.
Mathematical Strategies	Student consistently implements appropriate strategies (may include but not limited to use of solving simpler problems, use of tables, diagrams, make a table, chart, diagram, estimation).	**Student implements appropriate strategies (may include but not limited to use of solving simpler problems, drawing a picture, estimation, making a chart or table) most of the time.**	Student attempts to use strategies (may include but not limited to use of simpler problems, drawing a picture, estimation, making tables, diagrams) to solve problems some of the time.	Student demonstrates understanding of problems and fails to apply an appropriate strategy.
Understanding	Student demonstrates an extensive understanding of the problem with correct solutions.	Student demonstrates a general understanding of the problem with correct solutions most of the time (correct and complete, with minor computational errors possible).	**Student demonstrates understanding of the problem with correct solutions some of the time.**	**Student rarely demonstrates understanding of the problems with incomplete or incorrect solutions.**
Terminology and Representations	Student uses appropriate and accurate mathematical terminology and representations (e.g., pictures, charts, graphs, tables, diagrams, and/or notation) in a clear and concise manner.	ppropriate and accurate terminology and/or representations charts, graphs, tables, diagrams, and effectively most of the time.	Student attempts to use mathematical terminology and/or representations (e.g. pictures, charts, graphs, tables, diagrams, and/or notation) but terminology/ representations may be unclear and/or misused.	Student rarely or ineffectively uses mathematical terminology and/or representations, which are appropriate for 5th grade.
Reasoning	Student demonstrates mathematical reasoning (*support) in an appropriate and consistent manner.	Student demonstrates mathematical reasoning (*support), but may be unclear, or incomplete.	Student demonstrates limited mathematical reasoning (*support).	Student rarely demonstrates appropriate mathematical reasoning (**support is not present).

*Support references the student's ability to provide supporting evidence to his/her reasoning
.**Support is not evident in the Novice performance.

GRADE 8 MATHEMATICS				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Skills, Concepts and Relationships	Student demonstrates a comprehensive under- standing of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content.	Student demonstrates under-standing of 8th grade skills, concepts, and relationships in number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content most of the time.	Student demonstrates understanding of 8th grade skills, concepts, and relationships in number/ computation, geometry/ measurement, probability/ statistics, and algebraic ideas as defined by Kentucky's Core Content some of the time.	Student rarely demonstrates understanding of 8th grade skills, concepts, and relationships in number/ computation, geometry/ measurement, probability/ statistics, and algebraic ideas as defined by Kentucky's Core Content.
Mathematical Strategies	Student consistently implements an appropriate strategy (e.g., making a table, a diagram, guess and check, using technology, or working a simpler problem) to solve problems.	Student accurately uses an appropriate strategy (e.g., making a table, a diagram, guess and check, using technology, or working a simpler problem) to solve problems most of the time	Student attempts to use appropriate strategies (e.g., making a table, a diagram, guess and check, using technology, or working a simpler problem) to solve problems some of the time.	Student attempts to implement strategies for solving problems but may use inappropriate strategies (will not lead to a correct solution).
Understanding	Student demonstrates extensive understanding of problems by providing correct and complete solutions.	Student demonstrates a general understanding of problems by providing complete solutions most of the time with possible minor computational errors.	Student demonstrates understanding of problems as indicated by correct or complete solutions some of the time.	Student rarely demonstrates understanding of problems as indicated by incomplete or incorrect solutions.
Terminology and Representations	Student uses appropriate and accurate mathematical terminology and representations (symbols, graphs, tables, diagrams, models) in a clear and concise manner to communicate a sequential development of the solution.	Student uses appropriate and accurate mathematical terminology (e.g., central tendency) and/or representation (symbols, graphs, tables, diagrams, models) effectively most of the time.	Student uses some mathematical terminology and/or representations (symbols, graphs, tables, diagrams, models), but terminology/representations may be unclear or misused (e.g., substituting the acronym LCM for GCF).	Student rarely or ineffectively uses mathematical terminology and/or representation that are appropriate for 8th grade.
Reasoning	Student consistently demonstrates appropriate mathematical reasoning (e.g., checking the reasonableness of results for all parts of the problem).	Student demonstrates appropriate mathematical reasoning but may have gaps (shows the "what" with gaps in "why").	Student demonstrates appropriate mathematical reasoning some of the time.	Student rarely uses appropriate mathematical reasoning or no mathematical reasoning at all.

GRADE 11 MATHEMATICS				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Skills, Concepts and Relationships	Student demonstrates an extensive understanding of concepts, skills, and relationships of number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content for high school students.	Student demonstrates an understanding of concepts, skills and relationships of number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content for high school students most of the time.	Student demonstrates understanding of concepts, skills, and relationships related to number/computation, geometry/measurement, probability/statistics and algebraic ideas as defined by Kentucky's Core Content for high school students some of the time.	Student rarely demonstrates understanding of concepts, skills, and relationships of number/computation, geometry/measurement, probability/statistics, and algebraic ideas as defined by Kentucky's Core Content for high school students.
Mathematical Strategies	Student demonstrates consistent, effective application of the problem-solving process. Student consistently shows evidence of a well-developed plan for solving problems, using appropriate procedures, sequence of steps, and relationships between the steps	Student demonstrates effective application of the problem-solving process by showing evidence of a well-developed plan for solving problems, using appropriate procedures, sequence of steps, and relationships between the steps most of the time.	Student demonstrates correct application of the problem solving process by implementing appropriate strategies for solving problems some of the time.	Student rarely demonstrates appropriate problem solving skills and/or rarely applies the problem-solving process correctly.
Understanding	Student demonstrates an extensive understanding of problems and procedures by arriving at complete and correct solutions. (Student rarely has minor computational errors that do not interfere with conceptual understanding.)	Student demonstrates a general understanding of problems and procedures by arriving at correct and complete solutions most of the time. (may have some minor computational errors: errors that do not interfere with conceptual understanding).	Student demonstrates some understanding of problems and procedures by arriving at correct and complete solutions some of the time.	Student rarely demonstrates understanding of problems and procedures by arriving at solutions that may be incorrect or incomplete.
Terminology and Representations	Student consistently and effectively uses appropriate and accurate mathematical representations/models (symbols, graphs, tables, diagrams, models) and correct mathematical terminology to communicate in a clear and concise manner.	Student uses appropriate and accurate mathematical representations/models (symbols, graphs, tables, diagrams, models) and correct mathematical terminology to effectively communicate a sequential development of the solution most of the time.	Student uses appropriate and accurate mathematical representations/models (symbols, graphs, tables, diagrams, models) and correct mathematical terminology appropriate for high school students some of the time.	Student rarely uses appropriate mathematical representations/models (symbols, graphs, tables, diagrams, models) appropriate for high school students and mathematical terminology.
Reasoning	Student consistently and effectively demonstrates appropriate mathematical reasoning to solve problems (e.g. make and investigate mathematical conjectures, make generalizations, make predictions, and/or defend solutions).	Student demonstrates appropriate use of mathematical reasoning to solve problems (e.g. make and investigate mathematical conjectures, make generalizations, make predictions, and/or defend solutions) most of the time.	Student demonstrates appropriate mathematical reasoning (e.g. make and investigate mathematical conjectures, make generalizations, make predictions, and/or defend solutions) some of the time.	Student rarely demonstrates appropriate use of mathematical reasoning.

GRADE 4 SCIENCE (No change)

The distinguished science student, when compared to age appropriate goals and standards, is considered to be 'above grade level' in terms of engaging in scientific activity and learning. The words 'extensive' and 'sophisticated' are used often as descriptors for this level. Extensive should be understood as the student provides fully developed responses which include supporting, relevant details that are accurate and appropriate, vocabulary and concepts from the discipline are used, and connections to the real world, across disciplines or within the discipline, are made. 'Sophisticated' implies that the student's work reflects maturity above grade level, and responses, which are complex, supported by elaborate details.

The proficient science student, when compared to age appropriate goals and standards, is considered to be 'on target' in terms of engaging in scientific activity and learning. The word 'appropriate' is used often as a descriptor for this level. When it is used, it suggests that the student provides responses that include support/justification, relevant details, and that demonstrate an understanding of concepts and vocabulary. Occasional inaccuracies, which do not interfere with conceptual understanding, may be present.

The apprentice science student, when compared to age appropriate goals and standards, is considered to be 'developing' in terms of engaging in scientific activity and learning. The word 'basic' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student provides partial responses or responses, which are limited in either accuracy or explanation, and which demonstrate limited understanding of the vocabulary and concepts of the discipline.

The novice science student, when compared to age appropriate goals and standards, is considered to be more of a 'beginner' in terms of engaging in scientific activity and learning. The word 'minimal' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student demonstrates little understanding of concepts and vocabulary, and that responses include inaccuracies/misconceptions and/or little explanation. The following describe science performance:

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Content	Student demonstrates *extensive* knowledge of science content as outlined in the core content (i.e., Properties of Objects and Materials; Position and Motion of Objects; Light, Heat, Electricity, and Magnetism; Properties of Earth Materials; Objects in the Sky; Changes in Earth and Sky; The Characteristics of Organisms; Life Cycles of Organisms; Organisms and Their Environments).	Student demonstrates *appropriate* knowledge of science content as outlined in the core content (i.e., Properties of Objects and Materials; Position and Motion of Objects; Light, Heat, Electricity, and Magnetism; Properties of Earth Materials; Objects in the Sky; Changes in Earth and Sky; The Characteristics of Organisms; Life Cycles of Organisms; Organisms and Their Environments).	Student demonstrates *basic* knowledge of science content as outlined in the core content (i.e., Properties of Objects and Materials; Position and Motion of Objects; Light, Heat, Electricity, and Magnetism; Properties of Earth Materials; Objects in the Sky; Changes in Earth and Sky; The Characteristics of Organisms; Life Cycles of Organisms; Organisms and Their Environments).	Student demonstrates *minimal* knowledge of science content as outlined in the core content (i.e., Properties of Objects and Materials; Position and Motion of Objects; Light, Heat, Electricity, and Magnetism; Properties of Earth Materials; Objects in the Sky; Changes in Earth and Sky; The Characteristics of Organisms; Life Cycles of Organisms; Organisms and Their Environments).

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Process/Inquiry	Student demonstrates *sophisticated* application of appropriate science process/inquiry skills [i.e., question, observe, use simple equipment and skills, predict, use evidence to develop reasonable explanations, design and conduct simple scientific investigations, review other students' investigations and explanations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates application of appropriate science process/inquiry skills [i.e., question, observe, use simple equipment and skills, use evidence to develop reasonable explanations, design and conduct simple scientific investigations, review other students' investigations and explanations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates application of some appropriate science process/inquiry skills [i.e., question, observe, use simple equipment and skills, use evidence to develop reasonable explanations, design and conduct simple scientific investigations, review other students' investigations and explanations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates ineffective application of appropriate science process/inquiry skills [i.e., question, observe, use simple equipment and skills, use evidence to develop reasonable explanations, design and conduct simple scientific investigations, review other students' investigations and explanations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.
Themes/ Concepts	Student demonstrates *extensive* understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *appropriate* understanding of unifying science themes/concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *basic*, sometimes fragmented, understanding of unifying science themes/concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *minimal* understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).
Communication	Student demonstrates *sophisticated* communication skills by organizing information, representing data in several ways (e.g., graphs, drawings, tables, words), communicating (e.g., draw, graph, write) designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *appropriate* communication skills by organizing information, representing data in more than one way (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *basic* communication skills (e.g., information organization, representation of data, communication of designs, procedures, observations, and results of investigations, supporting with evidence, using appropriate vocabulary, and addressing purpose and audience).	Student demonstrates ineffective communication skills. Lacks skill in organizing information, representing data (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.
Critical Thinking	Student consistently demonstrates use of critical thinking skills (e.g., compares, contrasts, classifies, analyzes errors, synthesizes, summarizes, uses analogies).	Student demonstrates *appropriate* use of critical thinking skills (e.g., compares, contrasts, classifies, analyzes errors, synthesizes, summarizes, uses analogies).	Student demonstrates *basic* use of critical thinking skills (e.g., compares, contrasts, classifies, analyzes errors, synthesizes, summarizes, uses analogies).	Student demonstrates *minimal* use of critical thinking skills (e.g., compares, contrasts, classifies, analyzes errors, synthesizes, summarizes, uses analogies).

GRADE 7 SCIENCE

A paper and pencil test cannot assess important science skills such as gathering data, designing and conducting experiments, and using scientific equipment. These descriptors relate to what can be assessed.

The distinguished science student, when compared to age appropriate goals and standards, is considered to be 'above grade level' in terms of engaging in scientific activity and learning. The words 'extensive' and 'sophisticated' are used often as descriptors for this level. Extensive should be understood as the student provides fully developed responses which include supporting, relevant details that are accurate and appropriate, vocabulary and concepts from the discipline are used, and connections to the real world, across disciplines or within the discipline, are made. 'Sophisticated' implies that the student's work reflects maturity above grade level, and responses, which are complex, supported by elaborate details.

The proficient science student, when compared to age appropriate goals and standards, is considered to be 'on target' in terms of engaging in scientific activity and learning. The word 'appropriate' is used often as a descriptor for this level. When it is used, it suggests that the student provides responses that include support/justification, relevant details, and that demonstrate an understanding of concepts and vocabulary. Occasional inaccuracies, which do not interfere with conceptual understanding, may be present.

The apprentice science student, when compared to age appropriate goals and standards, is considered to be 'developing' in terms of engaging in scientific activity and learning. The word 'basic' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student provides partial responses or responses which are limited in either accuracy or explanation, and which demonstrate limited understanding of the vocabulary and concepts of the discipline.

The novice science student, when compared to age appropriate goals and standards, is considered to be more of a 'beginner' in terms of engaging in scientific activity and learning. The word 'minimal' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student demonstrates little understanding of concepts and vocabulary, and that responses include inaccuracies/misconceptions and/or little explanation. The following describe science performance:

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Content	Student demonstrates *extensive* knowledge of science content as outlined in the core content (i.e., Properties and Changes of Properties in Matter; Motion and Forces; Transfer of Energy; Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere; Earth's History; Earth in the Solar System; Structure and Function in Living Systems; Regulation and Behavior; Reproduction and Heredity; Diversity and Adaptations of Organisms; Populations and Ecosystems).	Student demonstrates appropriate knowledge of science content as outlined in the core content (i.e., Properties and Changes of Properties in Matter; Motion and Forces; Transfer of Energy; Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere; Earth's History; Earth in the Solar System; Structure and Function in Living Systems; Regulation and Behavior; Reproduction and Heredity; Diversity and Adaptations of Organisms; Populations and Ecosystems).	Student demonstrates *basic* knowledge of science content as outlined in the core content (i.e., Properties and Changes of Properties in Matter; Motion and Forces; Transfer of Energy; Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere; Earth's History; Earth in the Solar System; Structure and Function in Living Systems; Regulation and Behavior; Reproduction and Heredity; Diversity and Adaptations of Organisms; Populations and Ecosystems).	Student demonstrates *minimal* knowledge of science content as outlined in the core content (i.e., Properties and Changes of *Properties* in Matter; Motion and Forces; Transfer of Energy; Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere; Earth's History; Earth in the Solar System; Structure and Function in Living Systems; Regulation and Behavior; Reproduction and Heredity; Diversity and Adaptations of Organisms; Populations and Ecosystems).

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Process/Inquiry	Student demonstrates sophisticated application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates application of some *appropriate* science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates ineffective application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.
Themes/Concepts	Student demonstrates *extensive** understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *appropriate* understanding of unifying science themes/concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *basic*, sometimes fragmented, understanding of unifying science themes/-concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *minimal* understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).
Communication	Student demonstrates *sophisticated* communication skills by organizing information, representing data in several ways (e.g., graphs, drawings, tables, words), communicating (e.g., draw, graph, write) designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *appropriate* communication skills by organizing information, representing data in more than one way (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *basic* communication skills (e.g., information organization, representation of data, communication of designs, procedures, observations, and results of investigations, supporting with evidence, using appropriate vocabulary, and addressing purpose and audience).	Student demonstrates *ineffective* communication skills. Lacks skill in organizing information, representing data (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.
Critical Thinking	Student consistently demonstrates use of critical thinking skills (e.g., analyzes perspectives, uses inductive and deductive reasoning, and creates metaphors).	Student demonstrates *appropriate* use of critical thinking skills (e.g., analyzes perspectives, uses inductive and deductive reasoning, and creates metaphors).	Student demonstrates *basic* use of critical thinking skills (e.g., analyzes perspectives, uses inductive and deductive reasoning, and creates metaphors).	Student demonstrates *minimal* use of critical thinking skills (e.g., analyzes perspectives, uses inductive and deductive reasoning, and creates metaphors).

GRADE 11 SCIENCE (No changes)

The distinguished science student, when compared to age appropriate goals and standards, is considered to be 'above grade level' in terms of engaging in scientific activity and learning. The words 'extensive' and 'sophisticated' are used often as descriptors for this level. Extensive should be understood as the student provides fully developed responses which include supporting, relevant details that are accurate and appropriate, vocabulary and concepts from the discipline are used, and connections to the real world, across disciplines or within the discipline, are made. 'Sophisticated' implies that the student's work reflects maturity above grade level, and responses, which are complex, supported by elaborate details.

The proficient science student, when compared to age appropriate goals and standards, is considered to be 'on target' in terms of engaging in scientific activity and learning. The word 'appropriate' is used often as a descriptor for this level. When it is used, it suggests that the student provides responses that include support/justification, relevant details, and which demonstrate an understanding of concepts and vocabulary. Occasional inaccuracies, which do not interfere with conceptual understanding, may be present.

The apprentice science student, when compared to age appropriate goals and standards, is considered to be 'developing' in terms of engaging in scientific activity and learning. The word 'basic' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student provides partial responses or responses which are limited in either accuracy or explanation, and which demonstrate limited understanding of the vocabulary and concepts of the discipline.

The novice science student, when compared to age appropriate goals and standards, is considered to be more of a 'beginner' in terms of engaging in scientific activity and learning. The word 'minimal' is used often as a descriptor for this level. When it is used, it is intended to suggest that the student demonstrates little understanding of concepts and vocabulary, and that responses include inaccuracies/misconceptions and/or little explanation. The following describe science performance:

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Content	Student demonstrates *extensive* knowledge of science content as outlined in the core content (i.e., Structure of Atoms, Structure and Properties of Matter, Chemical Reactions, Motions and Forces, Conservation of Energy and Increase in Disorder, Inter-actions of Energy and Matter, Energy in the Earth System, Geochemical Cycles, The Formation and Ongoing Changes of the Earth Sys-tem, The Formation and Ongoing Changes of the Universe, The Cell, The Behavior of Organisms, The Molecular Basis of Heredity, Biological Change, The Interdependence of Organisms, and Matter, Energy, and Organization in Living Systems).	Student demonstrates *appropriate* knowledge of science content as outlined in the core content (i.e., Structure of Atoms, Structure and Properties of Matter, Chemical Reactions, Motions and Forces, Conservation of Energy and Increase in Disorder, Interactions of Energy and Matter, Energy in the Earth System, Geochemical Cycles, The Formation and Ongoing Changes of the Earth System, The Formation and Ongoing Changes of the Universe, The Cell, The Behavior of Organisms, The Molecular Basis of Heredity, Biological Change, The Interdependence of Organisms, and Matter, Energy, and Organization in Living Systems).	Student demonstrates *basic* knowledge of science content as outlined in the core content (i.e., Structure of Atoms, Structure and Properties of Matter, Chemical Reactions, Motions and Forces, Conservation of Energy and Increase in Disorder, Interactions of Energy and Matter, Energy in the Earth System, Geochemical Cycles, The Formation and Ongoing Changes of the Earth System, The Formation and Ongoing Changes of the Universe, The Cell, The Behavior of Organisms, The Molecular Basis of Heredity, Biological Change, The Interdependence of Organisms, and Matter, Energy, and Organization in Living Systems).	Student demonstrates *minimal* knowledge of science content as outlined in the core content (i.e., Structure of Atoms, Structure and Properties of Matter, Chemical Reactions, Motions and Forces, Conservation of Energy and Increase in Disorder, Interactions of Energy and Matter, Energy in the Earth System, Geochemical Cycles, The Formation and Ongoing Changes of the Earth System, The Formation and Ongoing Changes of the Universe, The Cell, The Behavior of Organisms, The Molecular Basis of Heredity, Biological Change, The Interdependence of Organisms, and Matter, Energy, and Organization in Living Systems).

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Process/Inquiry	Student demonstrates *sophisticated* application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations, formulates testable hypotheses, uses equipment] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science	Student demonstrates application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations, formulates testable hypotheses, uses equipment] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates application of some appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations, formulates testable hypotheses, uses equipment] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.	Student demonstrates ineffective application of appropriate science process/inquiry skills [i.e., refines and refocuses questions, uses appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data, uses evidence to develop scientific explanations, designs and conducts scientific investigations, reviews and analyzes others' investigations, formulates testable hypotheses, uses equipment] to solve problems and /or address issues related to Science and Technology, Science in Personal and Social Perspectives, and History and Nature of Science.
Themes/Concepts	Student demonstrates *extensive* understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *appropriate* understanding of unifying science themes/concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *basic* sometimes fragmented, understanding of unifying science themes/ concepts (i.e., (Patterns, Systems, Scale and Models, Constancy, and Change Over Time).	Student demonstrates *minimal* understanding of unifying science themes/concepts (i.e., Patterns, Systems, Scale and Models, Constancy, and Change Over Time).
Communication	Student demonstrates *sophisticated** communication skills by organizing information, re-presenting data in several ways (e.g., graphs, drawings, tables, words), communicating (e.g., draw, graph, write) designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *appropriate** communication skills by organizing information, representing data in more than one way (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.	Student demonstrates *basic** communication skills (e.g., information organization, representation of data, communication of designs, procedures, observations, and results of investigations, supporting with evidence, using appropriate vocabulary, and addressing purpose and audience).	Student demonstrates ineffective communication skills. Lacks skill in organizing information, representing data (e.g., graphs, drawings, tables, words), communicating designs, procedures, observations, and results of scientific investigations, using evidence to support conclusions, using appropriate vocabulary, and communicating in a form suited to the purpose and audience.
Critical Thinking	Student consistently demonstrates use of critical thinking skills (e.g., evaluates, synthesizes, applies, generalizes, debates).	Student demonstrates *appropriate* use of critical thinking skills (e.g., evaluates, synthesizes, applies, generalizes, debates).	Student demonstrates *basic* use of critical thinking skills (e.g., evaluates, synthesizes, applies, generalizes, debates).	Student demonstrates *minimal* use of critical thinking skills (e.g., evaluates, synthesizes, applies,

GRADE 5 SOCIAL STUDIES ASSESSMENT DESCRIPTORS - DRAFT

Definitions of General Descriptors for All Levels in Social Studies

Extensive: Provides fully developed responses which include supporting relevant details and examples that are accurate and appropriate, uses vocabulary and concepts from the discipline, and makes connections to the real world, across the disciplines, or within the discipline.

Broad: Provides complete and accurate responses, which include supporting, relevant details and/or examples that are appropriate, and understands the vocabulary and concepts from the discipline.

Basic: Provides incomplete responses or responses, which are limited in either accuracy or explanation. Responses demonstrate limited understanding of the vocabulary and concepts of the discipline.

Minimal: Provides incomplete responses, which demonstrate little understanding of concepts and vocabulary, and includes inaccuracies and/or little explanation.

<table>
<tr><th></th><th>DISTINGUISHED</th><th>PROFICIENT</th><th>APPRENTICE</th><th>NOVICE</th></tr>
<tr><td rowspan="2"><u>Knowledge</u></td><td>Student demonstrates extensive knowledge of Kentucky and the United States in each of the five strands of social studies. Specifics include:</td><td>Student demonstrates broad knowledge of: Kentucky and the United States in each of the five strands of social studies. Specifics include:</td><td>Student demonstrates basic knowledge of Kentucky and the United States in each of the five strands of social studies. Specifics include:</td><td>Student demonstrates minimal knowledge of Kentucky and the United States in each of the five strands of social studies. Specifics include:</td></tr>
<tr><td colspan="4">Government and Civics: The purpose and function of local, state, and United States governments, as well as, understanding of the rights and responsibilities of citizens in a democratic society.
Culture and Society: As people meet their needs, cultures emerge, and the elements unique to each culture affect perspectives and the interactions among people of varying cultures.
Economics: Basic economic terms and concepts are used in making individual, business and government economic decisions.
Geography: Understanding of the use of simple geographic tools; factors of location; regional characteristics (human and physical); human settlement patterns; and the relationship between humans and the environment.
Historical Perspective: An overview of Kentucky and the United States from beginning to present day.</td></tr>
<tr><td><u>Decisions, Concepts. Problems</u></td><td>Student makes reasonable decisions, addresses issues, explains concepts and/or solves problems using fully developed examples. The skills the student uses include, but are not limited to:
• Read, interpret, evaluate information
• Make comparisons
• Identify multiple causes
• Organize, analyze, summarize or synthesize answer
• Discriminate among plausible answers</td><td>Student makes reasonable decisions, addresses issues, explains concepts and/or solves problems using relevant examples. The skills the student uses include, but are not limited to:
• Read, interpret, evaluate information
• Make comparisons
• Identify multiple causes
• Organize, analyze, summarize or synthesize answer
• Discriminate among plausible answers</td><td>Student attempts, with limited success, to make decisions, address issues, explain concepts and/or solve problems using limited or unelaborated examples. The skills the student uses include, but are not limited to:
• Read, interpret, evaluate information
• Make comparisons
• Identify multiple causes
• Organize, analyze, summarize or synthesize answer
• Discriminate among plausible answers</td><td>Student fails, or attempts unsuccessfully, to make decisions; address issues, explains concepts and/or solves problems.</td></tr>
</table>

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Vocabulary Concepts	**Student demonstrates an extensive understanding of social studies vocabulary and concepts. Examples include, but are not limited to:** Government/Civics: Democracy, branches of government, rights and responsibilities of citizens, Bill of Rights, U.S. Constitution, Preamble, levels of government Culture/Society: Social groups, perspective, elements of culture, conflict, competition, compromise, cooperation Economics: Scarcity, supply and demand, opportunity costs, goods and services, wants and needs, economic systems, profit, barter, money, producers, consumers, specialization Geography: Location, environment, region, human and physical characteristics, adaptation, modification Historical Perspective: Primary/secondary sources, symbol, periods and eras, causes, change over time, chronological order	Student demonstrates a broad understanding of social studies vocabulary and concepts. Examples include but are not limited to: Government/Civics: Democracy, branches of government, rights and responsibilities of citizens, Bill of Rights, U.S. Constitution, Preamble, levels of government Culture/Society: Social groups, perspective, elements of culture, conflict, competition, compromise, cooperation Economics: Scarcity, supply and demand, opportunity costs, goods and services, wants and needs, economic systems, profit, barter, money, producers, consumers, specialization Geography: Location, environment, region, human and physical characteristics, adaptation, modification Historical Perspective: Primary/secondary sources, symbol, periods and eras, causes, change over time, chronological order	**Student demonstrates a basic understanding of social studies vocabulary and concepts. Examples include but are not limited to:** Government/Civics: Democracy, branches of government, rights and responsibilities of citizens, Bill of Rights, U.S. Constitution, Preamble, levels of government Culture/Society: Social groups, perspective, elements of culture, conflict, competition, compromise, cooperation Economics: Scarcity, supply and demand, opportunity costs, goods and services, wants and needs, economic systems, profit, barter, money, producers, consumers, specialization Geography: Location, environment, region, human and physical characteristics, adaptation, modification Historical Perspective: Primary/secondary sources, symbol, periods and eras, causes, change over time, chronological order	**Student demonstrates a minimal or no understanding of social studies vocabulary and concepts. Examples include but are not limited to:** *Government/Civics: Democracy, branches of government, rights and responsibilities of citizens,* Bill of Rights, U.S. Constitution, Preamble, levels of government Culture/Society: Social groups, perspective, elements of culture, conflict, competition, compromise, cooperation Economics: Scarcity, supply and demand, opportunity costs, goods and services, wants and needs, economic systems, profit, barter, money, producers, consumers, specialization Geography: Location, environment, region, human and physical characteristics, adaptation, modification Historical Perspective: Primary/secondary sources, symbol, periods and eras, causes, change over time, chronological order
Communication	Student communicates complex ideas or concepts completely through details and examples in a logical, coherent manner in reference to the five strands of social studies.	Student communicates ideas or concepts effectively in an organized manner in reference to the five strands of social studies.	Student communicates reasonably but with limited detail and organization in reference to the five strands of social studies.	Student communicates ineffectively with little or no detail in reference to the five strands of social studies.
Connections	Student demonstrates an ability to effectively connect social studies concepts by using critical thinking skills. Examples include but are not limited to: • Compare and contrast • Identify causes • Analyze • Chronological thinking	*Student demonstrates a basic ability to effectively connect social studies concepts by using critical thinking skills.* • Compare and contrast • Identify causes • Analyze • Chronological thinking	*Student demonstrates some ability to connect social studies concepts by using critical thinking skills.* • Compare and contrast • Identify causes • Analyze • Chronological thinking	Student shows no evidence of making connections among social studies concepts.

GRADE 8 SOCIAL STUDIES

Definitions of General Descriptors for All Levels in Social Studies

Extensive: Provides fully developed responses which include supporting relevant details and examples that are accurate and appropriate, uses vocabulary and concepts from the discipline, and makes connections to the real world, across the disciplines or within the discipline.

Broad: Provides complete and accurate responses, which include supporting, relevant details and/or examples that are appropriate, and understands the vocabulary and concepts from the discipline.

Basic: Provides incomplete responses or responses which are limited in either accuracy or explanation. Responses demonstrate limited understanding of the vocabulary and concepts of the discipline.

Minimal: Provides incomplete responses, which demonstrate little understanding of concepts and vocabulary, and includes inaccuracies and/or little explanation.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Knowledge	Student demonstrates extensive knowledge of the five strands of social studies in reference to world geography, ancient civilizations to 1500 A.D., and United States history from Age of Exploration to Reconstruction. Specifics include:	Student demonstrates broad knowledge of the five strands of social studies in reference to world geography, ancient civilizations to 1500 A.D., and United States history from Age of Exploration to Reconstruction. Specifics include:	Student demonstrates basic knowledge of the five strands of social studies in reference to world geography, ancient civilizations to 1500 A.D., and United States history from Age of Exploration to Reconstruction. Specifics include:	Student demonstrates a minimal knowledge of the five strands of social studies in reference to world geography, ancient civilizations to 1500 A.D., and United States history from Age of Exploration to Reconstruction. Specifics include:
	Government and Civics: Governments take different forms, in-depth understanding of the United States Constitution. Culture and Society: An understanding of the common elements of various cultures, and the unique perspectives that develop as different cultures address their human needs in similar and different ways Economics: An understanding of advanced economic terms and broad concepts such as market systems, money (unit of account) and interdependence. Geography: An understanding of various geographic tools; how geography impacts culture, history and economic and political decisions. Historical Perspective: The study of history, which is interpretive by nature, at this level includes United States history to Reconstruction and World History to 1500.			

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Decisions ***Problem Solving***	Student makes reasonable decisions, addresses issues, explains concepts and/or solves problems using fully developed examples. The skills the student uses include, but are not limited to: Read interpret, evaluate, information Make comparisons Identify multiple causes and effects Draw conclusions and justify explanations Consider multiple solutions and make decisions by applying criteria Organize, analyze synthesize answers. Discriminates among plausible answers	**Student makes reasonable decisions, address issues, explain concepts and/or solve problems using relevant examples. The skills the student uses include, but are not limited to:** Read interpret, evaluate, information Make comparisons Identify multiple causes and effects Draw conclusions and justify explanations Consider multiple solutions and make decisions by applying criteria Organize, analyze synthesize answers. Discriminates among plausible answers	Student attempts to make decisions, address issues, explain concepts and/or solve problems using limited or unelaborated examples. The skills the student uses include, but are not limited to: Read interpret, evaluate, information Make comparisons Identify multiple causes and effects Draw conclusions and justify explanations Consider multiple solutions and make decisions by applying criteria Organize, analyze synthesize answers. Discriminates among plausible answers	Student fails or attempts unsuccessfully, with minimal success, to make reasonable decisions, address issues, explain concepts and/or solve problems using relevant examples. .
Vocabulary Concepts	Student demonstrates an extensive understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to:	**Student demonstrates a broad understanding of social studies vocabulary and concepts. Examples of vocabulary or concepts include, but are not limited to:**	Student demonstrates a basic understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to:	Student demonstrates minimal or no understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to:

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
<u>Vocabulary</u> **<u>Concepts</u>** **(con't)**	Government/Civics: Federalism, separation of power, amendment, rule of law, veto, republic, U. S. Constitution, Bill of Rights, judicial review, Declaration of Independence, rights, responsibilities, duties of citizens Culture/Society: Social institutions, compromise, conflict, competition, ethnic groups, elements of culture, perspective, interaction Economics: Competition, specialization, profit, market, economic systems, productive resources, consumer, opportunity cost, supply and demand, money, competition, interdependence Geography: Technical advances, map projection, migration, natural resources, developed country, regions, place, settlement, population density, adaptation, modification Historical Perspective: Perspective, individual rights, civilization, sectionalism, manifest destiny, primary and secondary sources, multiple causes and effects	Government/Civics: Federalism, separation of power, amendment, rule of law, veto, republic, U. S. Constitution, Bill of Rights, judicial review, Declaration of Independence, rights, responsibilities, duties of citizens Culture/Society: Social institutions, compromise, conflict, competition, ethnic groups, elements of culture, perspective, interaction Economics: Competition, specialization, profit, market, economic systems, productive resources, consumer, opportunity cost, supply and demand, money, competition, interdependence Geography: Technical advances, map projection, migration, natural resources, developed country, regions, place, settlement, population density, adaptation, modification Historical Perspective: Perspective, individual rights, civilization, sectionalism, manifest destiny, primary and secondary sources, multiple causes and effects	Government/Civics: Federalism, separation of power, amendment, rule of law, veto, republic, U. S. Constitution, Bill of Rights, judicial review, Declaration of Independence, rights, responsibilities, duties of citizens Culture/Society: Social institutions, compromise, conflict, competition, ethnic groups, elements of culture, perspective, interaction Economics: Competition, specialization, profit, market, economic systems, productive resources, consumer, opportunity cost, supply and demand, money, competition, interdependence Geography: Technical advances, map projection, migration, natural resources, developed country, regions, place, settlement, population density, adaptation, modification Historical Perspective: Perspective, individual rights, civilization, sectionalism, manifest destiny, primary and secondary sources, multiple causes and effects	Government/Civics: Federalism, separation of power, amendment, rule of law, veto, republic, U. S. Constitution, Bill of Rights, judicial review, Declaration of Independence, rights, responsibilities, duties of citizens Culture/Society: Social institutions, compromise, conflict, competition, ethnic groups, elements of culture, perspective, interaction Economics: Competition, specialization, profit, market, economic systems, productive resources, consumer, opportunity cost, supply and demand, money, competition, interdependence Geography: Technical advances, map projection, migration, natural resources, developed country, regions, place, settlement, population density, adaptation, modification Historical Perspective: Perspective, individual rights, civilization, sectionalism, manifest destiny, primary and secondary sources, multiple causes and effects

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Communication	**Communicates complex ideas or concepts completely through details and examples in a logical, coherent manner in reference to the five strands of social studies**	Communicates ideas or concepts effectively in an organized manner in reference to the five strands of social studies	Student communicates reasonably but with limited detail and organization in reference to the five strands of social studies	Student communicates ineffectively with little or no detail in reference to the five strands of social studies
Connections	**Student demonstrates an ability to effectively connect social studies concepts by using critical thinking skills, such as:** Determining causes and effects Analyzing various perspectives Synthesizing Comparing and contrasting Chronological thinking	**Students demonstrates a basic ability to connect social studies concepts using critical thinking skills, such as:** Determining causes and effects Analyzing various perspectives Synthesizing Comparing and contrasting Chronological thinking	**Students demonstrates some ability to connect social studies concepts by using critical thinking skills, such as:** Determining causes and effects Analyzing various perspectives Synthesizing Comparing and contrasting Chronological thinking	Student shows no evidence of making connections among social studies concepts.

GRADE 11 SOCIAL STUDIES

Definitions of General Descriptors for All Levels in Social Studies

Extensive: Provides fully developed responses which include supporting relevant details and examples that are accurate and appropriate, uses vocabulary and concepts from the discipline, and makes connections to the real world, across the disciplines or within the discipline.

Broad: Provides complete and accurate responses, which include supporting, relevant details and examples that are appropriate, and understands the vocabulary and concepts from the discipline.

Basic: Provides incomplete responses or responses which are limited in either accuracy or explanation. Responses demonstrate limited understanding of the vocabulary and concepts of the discipline.

Minimal: Provides incomplete responses, which demonstrate little understanding of concepts and vocabulary, and includes inaccuracies and/or little explanation.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Knowledge	Student demonstrates extensive knowledge of the 5 strands of social studies. **Government and Civics: Recognition of the sources of power in different forms of government and an understanding of the complexities of a democracy that strives to protect individual's rights while promoting the common good (rights, responsibilities, Bill of Rights).** Culture/Society: Social institutions (family, religions, education, government, economy) and world events are affected and shaped by cultural beliefs and behaviors.	Student demonstrates broad knowledge of the 5 strands of social studies. Government and Civics: Understanding of the complexities of a democracy that strives to protect individual's rights while promoting the common good, (rights, responsibilities, Bill of Rights) Culture/Society: Social institutions and world events are affected and shaped by cultural beliefs and behaviors.	Student demonstrates basic knowledge of the 5 strands of social studies. Government and Civics: Understanding of the complexities of a democracy that strives to protect individual's rights while promoting the common good. Culture/Society: Social institutions and world events are affected and shaped by cultural beliefs and behaviors.	Student demonstrates minimal knowledge of the 5 strands of social studies. Government and Civics: Understanding of the complexities of a democracy that strives to protect individual's rights while promoting the common good. Culture/Society: Social institutions and world events are affected and shaped by cultural beliefs and behaviors.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Knowledge (con't)	Economics: An understanding of how economic decisions can have a personal, national, and global impact. Geography: An understanding of current and historical events and situations from a geographic perspective. Historical Perspective: The study of history, which is interpretive in nature, includes United States History from Reconstruction to present day, and World History from 1500 to the present.	Economics: An understanding of how economic decisions can have a personal, national, and global impact. Geography: An understanding of current and historical events and situations from a geographic perspective. Historical Perspective: The study of history, which is interpretive in nature, includes United States History from Reconstruction to present day, and World History from 1500 to the present.	Economics: An understanding of how economic decisions can have a personal, national, and global impact. Geography: An understanding of current and historical events and situations from a geographic perspective. Historical Perspective: The study of history, which is interpretive in nature, includes United States History from Reconstruction to present day, and World History from 1500 to the present.	Economics: An understanding of how economic decisions can have a personal, national, and global impact. Geography: An understanding of current and historical events and situations from a geographic perspective. Historical Perspective: The study of history, which is interpretive in nature, includes United States History from Reconstruction to present day, and World History from 1500 to the present.
Decisions Problem Solving	Student makes reasonable decisions, addresses issues, explains concepts and/or solves problems using fully developed examples. The skills the student uses include, but are not limited to, the following: Reading, interpreting, evaluating and presenting information Identifying multiple causes and effects Making comparisons Drawing conclusions, justifying explanations Defining problems, considering multiple solutions, and making decisions by applying criteria Organizing, analyzing, or synthesizing answers, presenting and defending answers.	Student makes reasonable decisions, addresses issues, explains concepts and/or solves problems using relevant examples. The skills the student uses include, but are not limited to, the following: Reading, interpreting, evaluating and presenting information Identifying multiple causes and effects Making comparisons Drawing conclusions, justifying explanations Defining problems, considering multiple solutions, and making decisions by applying criteria Organizing, analyzing, or synthesizing answers, presenting and defending answers.	Student attempts to make decisions, address issues, explain concepts and/or solve problems using limited or unelaborated examples. The skills the student uses may include but are not limited to, the following: Reading, interpreting, evaluating and presenting information. in a variety of formats on complex issues Identifying multiple causes and effects Making comparisons Drawing conclusions, justifying explanations and making predictions Defining problems, considering multiple solutions, and making decisions by applying criteria Organizing, analyzing. or synthesizing answers, presenting and defending answers.	Student fails or unsuccessfully attempts to make decisions, address issues, explain concepts and/or solve problems.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Understanding	Student demonstrates extensive understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to: Government and Civics: Justice, individual rights and responsibilities, common good, civil rights, limited government, source of power, government regulation Culture/Society: Philosophy, values, stereotypes, prejudice, genocide, discrimination, ethnocentrism, conflict resolution, religion, and technology. Economics: Entrepreneur, investment, mandate, stock market, economic sanctions, efficiency, equity Geography: Push and pull factors, dispersion, centralization Historical Perspectives: , Multiple causation, Reconstruction cultural diversity, capitalism, isolation, imperialism, urbanization, reform, equality, globalization, McCarthyism, Cold War, United Nations, nationalism, human rights, revolution, world war, militarism	Student demonstrates broad understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to: Government and Civics: Justice, individual rights, common good, civil rights, limited government, source of power, government regulation Culture/Society: Philosophy, values, stereotypes, prejudice, genocide, discrimination, ethnocentrism, conflict resolution Economics: Entrepreneur, investment, mandate, stock market, economic sanctions, efficiency, equity, security Geography: Push and pull factors, dispersion, centralization Historical Perspectives: Multiple causation, Reconstruction, cultural diversity, capitalism, isolation, imperialism, urbanization, reform, equality, globalization, McCarthyism, Cold War, United Nations, nationalism, human rights, revolution, world war, militarism	Student demonstrates basic understanding of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to: Government and Civics: Justice, individual rights, common good, civil rights, limited government, source of power, government regulation Culture/Society: Philosophy, values, stereotypes, prejudice, genocide, discrimination, ethnocentrism, conflict resolution Economics: Entrepreneur, investment, mandate, stock market, economic sanctions, efficiency, equity Geography: Push and pull factors, dispersion, centralization Historical Perspectives: Multiple causation, Reconstruction, cultural diversity, capitalism, isolation, imperialism, urbanization, reform, equality, globalization, McCarthyism, Cold War, United Nations, nationalism, human rights, revolution, world war, militarism	Student demonstrates minimal or no under-standing of social studies vocabulary and concepts. Examples of vocabulary and concepts include, but are not limited to: Government and Civics: Justice, individual rights, common good, civil rights, limited government, source of power, government regulation Culture/Society: Philosophy, values, stereotypes, prejudice, genocide, discrimination, ethnocentrism, conflict resolution Economics: Entrepreneur, investment, mandate, stock market, economic sanctions, efficiency, equity Geography: Push and pull factors, dispersion, centralization Historical Perspectives: Multiple causation, Reconstruction, cultural diversity, capitalism, isolation, imperialism, urbanization, reform, equality, globalization, McCarthyism, Cold War, United Nations, nationalism, human rights, revolution, world war, militarism

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Communication	Student communicates complex ideas or concepts completely through details and examples in a logical, coherent manner in reference to the five strands of social studies.	Student communicates ideas or concepts effectively in an organized manner in reference to to the five strands of social studies.	Student communicates reasonably but with limited detail and organization in reference to to the five strands of social studies.	Student communicates ineffectively with little or no detail in reference to the five strands of social studies.
Connections	Student demonstrates ability to effectively connect social studies concepts by using critical thinking skills. Examples include but are not limited to: Comparing and contrasting Identifying multiple causation Determining causes and effects Analyzing various perspectives Synthesizing Evaluating information, decisions, data, situations, etc. Justifying explanations and drawing conclusions Chronological thinking	Student demonstrates a basic ability to connect social studies concepts by using critical thinking skills. The skills the student uses include, but are not limited, to the following: Comparing and contrasting Identifying multiple causation Determining causes and effects Analyzing various perspectives Synthesizing Evaluating information, decisions, data, situations, etc. Justifying explanations and drawing conclusions Chronological thinking	Student demonstrates some ability to connect social studies concepts by using critical thinking skills. The skills the student may use include, but are not limited, to the following: Comparing and contrasting Identifying multiple causation Determining causes and effects Analyzing various perspectives Synthesizing Evaluating information, decisions, data, situations, etc. Justifying explanations and drawing conclusions Chronological thinking	Student shows no evidence of making connections among social studies concepts.

GRADE 5 ARTS & HUMANITIES (No Changes)

Note: These definitions apply to all descriptors:

Effective	Successfully produces desired effect.
Appropriate	Fits or is suitable to the given situation.
Relevant	Demonstrates a significant bearing upon the matter.
Sufficient	Enough (as defined in individual scoring guides)
Insightful	Shows depth of perception
Underdeveloped	Not adequately developed
Extensive	Reflecting a breadth and depth of knowledge
Broad	Reflecting a breadth of knowledge
Minimal	The least possible awareness
Basic	A beginning understanding

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Knowledge	Student demonstrates extensive knowledge of the elements and historical/ cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates broad knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates basic knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates minimal and/or incorrect knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.
Application	Student demonstrates consistent, effective application of knowledge of the elements and historical/ cultural context of music, dance, drama/ theatre, and visual arts as identified in the fifth grad Arts and Humanities core content to solve problems and/or address issues.	Student demonstrates effective application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content to solve problems.	Student demonstrates correct application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content in some situations.	Student demonstrates underdeveloped or inappropriate application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content to solve problems.
Concepts and Vocabulary	Student demonstrates extensive understanding of concepts and vocabulary related to the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates broad understanding of concepts and vocabulary related to the elements and historical/ cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates basic understanding of concepts and vocabulary related to the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	**Student demonstrates minimal understanding of concepts and vocabulary related to the elements and** historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Communication	Student demonstrates effective communication skills with insightful use of supporting examples and/or relevant details about the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates effective communication skills using supporting examples and/or sufficient details about the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates basic communication skills using supporting examples and/or sufficient details about the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates ineffective communication skills using supporting examples and/or sufficient details about the elements and historical/cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.
Critical Thinking	Student demonstrates extensive use of critical thinking skills as identified in the fifth grade Arts and Humanities core content.	Student demonstrates broad use of critical thinking skills as identified in the fifth grade Arts and Humanities core content.	Student demonstrates basic use of critical thinking skills as identified in the fifth grade Arts and Humanities core content.	**Student demonstrates minimal use of critical thinking skills as identified in the fifth grade Arts and** Humanities core content.

GRADE 8 ARTS & HUMANITIES

Note: These definitions apply to all descriptors:

Effective	Successfully produces desired effect.
Appropriate	Fits or is suitable to the given situation.
Relevant	Demonstrates a significant bearing upon the matter.
Sufficient	Enough (as defined in individual scoring guides)
Insightful	Shows depth of perception
Underdeveloped	Not adequately developed
Extensive	Reflecting detailed and developed knowledge
Broad	Reflecting developed knowledge
Minimal	The least possible awareness
Basic	A beginning understanding

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Knowledge	Student demonstrates extensive knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates broad knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates basic knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates minimal and/or incorrect knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.
Application	Student demonstrates consistent, effective application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content to solve problems and/or address issues.	Student demonstrates effective application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content to solve problems.	Student demonstrates correct application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content in some situations.	Student demonstrates underdeveloped or inappropriate application of knowledge of the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content to solve problems.
Concepts and Vocabulary	Student demonstrates extensive understanding of concepts and vocabulary related to the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates broad understanding of concepts and vocabulary related to the elements and historical/ cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates basic understanding of concepts and vocabulary related to the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates minimal understanding of concepts and vocabulary related to the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Communication	Student demonstrates effective communication skills with insightful use of supporting examples and/or relevant details about the elements and historical/ cultural context of music, dance, drama/theatre, and visual arts as identified in the eighth grade Arts and Humanities core content.	Student demonstrates effective communication skills using supporting examples and/or sufficient details about the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates basic communication skills using supporting examples and/or sufficient details about the elements and historical/ cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.	Student demonstrates ineffective communication skills using supporting examples and/or sufficient details about the elements and historical/cultural context of music, dance, drama/theatre, visual arts, and literature as identified in the 8th grade Arts and Humanities core content.
Critical Thinking	Student demonstrates extensive use of critical thinking skills as identified in the 8th grade Arts and Humanities core content.	Student demonstrates broad use of critical thinking skills as identified in the 8th grade Arts and Humanities core content.	Student demonstrates basic use of critical thinking skills as identified in the 8th grade Arts and Humanities core content.	Student demonstrates minimal use of critical thinking skills as identified in the 8th grade Arts and Humanities core content.

GRADE 11 ARTS & HUMANITIES				
Note: These definitions apply to all descriptors: Effective D,P Successfully produces desired effect. Appropriate D,P,A Fits or is suitable to the given situation. Relevant D,P,A,N Demonstrates a significant bearing upon the matter. Sufficient P Enough (as defined in individual scoring guides) Insightful D Shows depth of perception		Underdeveloped N Not adequately developed Extensive D Reflecting a breadth and depth of knowledge Broad P Reflecting a breadth of knowledge Limited N The least possible awareness Basic A A beginning understanding		
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Knowledge	Student demonstrates extensive knowledge of the elements and/or historical/ cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates broad knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, and literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content. (May have a missing part or minor errors)	Student demonstrates basic knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, and literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content. (May have incorrect/irrelevant pr missing parts)	Student demonstrates limited and/or incorrect knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.
Application	**Student demonstrates consistent, effective application of knowledge of the elements and/or** historical/ cultural context of music, dance, drama/ theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content to solve problems and/or address issues.	Student demonstrates effective application of knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, and literature and their interrelatedness as identified in the 11th grade Arts and Humanities core content to solve problems.	Student demonstrates correct application of knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content in some situations.	Student demonstrates underdeveloped or inappropriate application of knowledge of the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Concepts and Vocabulary	Student demonstrates extensive understanding of concepts and vocabulary related to the elements and/or historical/ cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates broad understanding of concepts and vocabulary related to the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates basic understanding of concepts and vocabulary related to the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates limited understanding of concepts and vocabulary related to the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.
Communication	Student demonstrates effective communication skills with insightful use of supporting examples and/or relevant details about the elements and/or historical/ cultural context of music, dance, drama/theatre, and visual arts as identified in the fifth grade Arts and Humanities core content.	Student demonstrates effective communication skills using supporting examples and/or sufficient details about the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates basic communication skills using supporting examples and/or sufficient details about the elements and/or historical/ cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.	Student demonstrates ineffective communication skills using supporting examples and/or sufficient details about the elements and/or historical/cultural context of music, dance, drama/theatre, visual arts, literature, and their interrelatedness as identified in the 11th grade Arts and Humanities core content.
Critical Thinking	Student fulfills all requirements of the question and demonstrates extensive use of critical thinking skills as identified in the 11th grade Arts and Humanities core content.	**Student fulfills essential requirements of the question and demonstrates broad use of critical thinking skills as identified in the 11th grade Arts and** Humanities core content.	**Student fulfills partial requirements of the question and demonstrates basic use of critical thinking skills as identified in the 11th grade Arts and** Humanities core content.	Student fulfills limited requirements of the question and demonstrates limited use of critical thinking skills as identified in the 11th grade Arts and Humanities core content.

GRADE 5 PRACTICAL LIVING/VOCATIONAL STUDIES (No Changes)				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Understanding Skills	**Student demonstrates an extensive understanding of the following life skills and makes innovative and insightful applications.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work	**Student demonstrates a broad understanding of the following life skills and makes connections to solve problems.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work	**Student demonstrates a basic knowledge with some understanding of life skills but may not consistently apply concepts.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content Te world of work	**Student demonstrates minimal knowledge of the following life skills.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work
Understanding Concepts	Student demonstrates an extensive understanding of the following concepts in the core content and makes comprehensive connections/applications to real life. Proper diet, exercises, and rest for positive effects on body systems Health and hygiene practices to prevent disease Nutritional snacks based on the food guide pyramid Physical activities to improve health	Student demonstrates a broad understanding of the following concepts in the core content and makes logical connections to real life. Proper diet, exercises, and rest for positive effects on body systems Health and hygiene practices to prevent disease Nutritional snacks based on the food guide pyramid Physical activities that improve health	Student demonstrates a basic knowledge with some understanding of the following concepts in he core content and makes some connections to real life. Proper diet, exercises, and rest for positive effects on body systems Health and hygiene practices to prevent disease Nutritional snacks based on the food guide pyramid Physical activities to improve health	Student demonstrates minimal knowledge of the following concepts in the core content and makes few connections to real life. Proper diet, exercises, and rest for positive effects on body systems Health and hygiene practices to prevent disease Nutritional snacks based on the food guide pyramid Physical activities to improve health

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Understanding Concepts (con't)	Safety procedures to eliminate recognized safety hazards Coping strategies that promote individual well-being Performance techniques in physical activities Consumer decisions identified in the core content Impact of consumer decisions on the environment Plan and save for specific goals People work and use good work habits **Importance of technology in the workplace**	Safety procedures to eliminate recognized safety hazards Coping strategies that promote individual well-being Performance techniques in physical activities Consumer decisions identified in the core content Impact of consumer decisions on the environment Plan and save for specific goals People work and use good work habits **Importance of technology in the workplace**	Safety procedures to eliminate recognized safety hazards Coping strategies that promote individual well-being Performance techniques in physical activities Consumer decisions identified in the core content Impact of consumer decisions on the environment Plan and save for specific goals People work and use good work habits **Importance of technology in the workplace**	Safety procedures to eliminate recognized safety hazards Coping strategies that promote individual well-being Performance techniques in physical activities Consumer decisions identified in the core content Impact of consumer decisions on the environment Plan and save for specific goals People work and use good work habits Importance of technology in the workplace
Services	**Student demonstrates extensive understanding of services and resources and the effective application of information to solve problems.** Appropriate community organizations to obtain health and safety services Community guidelines that promote healthy living environments	**Student demonstrates broad understanding of how to access services and resources and the effective application of this information.** Appropriate community organizations to obtain health and safety services Community guidelines that promote healthy living environments	**Student demonstrates basic knowledge of services and resources and a basic understanding how to access them.** Appropriate community organizations to obtain health and safety services Community guidelines that promote healthy living environments	**Student demonstrates minimal knowledge of services and resources and minimal understanding of how to access them.** Appropriate community organizations to obtain health and safety services Community guidelines that promote healthy living environments
Relationships	Student demonstrates and applies an extensive understanding of relationships and communicates this effectively. Team skills and appropriate group behaviors Strategies for working with other individuals Appropriate behaviors for both spectators and participants in activities	Student demonstrates broad understanding of relationships and applies or communicates this effectively. Team skills and appropriate group behaviors Strategies for working with other individuals Appropriate behaviors for both spectators and participants in activities	*Student demonstrates basic knowledge with some understanding of relationships.* Team skills and appropriate group behaviors Strategies for working with other individuals Appropriate behaviors for both spectators and participants in activities	*Student demonstrates minimal knowledge of relationships.* Team skills and appropriate group behaviors Strategies for working with other individuals Appropriate behaviors for both spectators and participants in activities

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Decision Making	Student demonstrates extensive understanding and application of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify a daily decision/problem/issue Determine relevant resources Gather information Generate a variety of solutions Predict consequences of solutions Make a decision or choice Analyze choice	Student demonstrates and applies decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify a daily decision/problem/issue Determine available resources Gather information Generate solutions Predict consequences of solutions Make a decision or choice Support choice	Student demonstrates basic knowledge with some understanding of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify a daily decision/problem/issue Determine available resources Gather information Generate solutions Predict a consequence Make a decision or choice	Student demonstrates minimal knowledge of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify a daily decision/problem/issue Determine resources Gather information Select a solution Make a decision or choice

GRADE 8 PRACTICAL LIVING/VOCATIONAL STUDIES

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Skills	**Student demonstrates an extensive understanding of the following life skills and makes insightful applications.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work	Student demonstrates a broad understanding of the following life skills and makes connections to solve problems. Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work	**Student demonstrates a basic knowledge with some understanding of the following life skills but may not consistently apply concepts.** **Individual emotional, mental, and social well-being** Individual physical well-being Consumerism as identified in the core content The world of work	**Student demonstrates minimal understanding of the following life skills.** Individual emotional, mental, and social well-being Individual physical well-being Consumerism as identified in the core content The world of work
Concepts	**Student demonstrates an extensive understanding of the following concepts in the core content and makes comprehensive connections/ applications to real life.** Health and hygiene practices to prevent disease Structure and function of the reproductive system Good health habits and their effect on body systems Daily food choices using dietary guidelines Physical activities that improve health Safety procedures for given situations Stress management and coping strategies that promote individual well-being The effect of physical activity on emotional well-being Techniques related to physical exercise Evaluation of products and services using a range of considerations	**Student demonstrates a broad understanding of the following concepts in the core content and makes logical connections to real life.** Health and hygiene practices to prevent disease Structure and function of the reproductive system Good health habits and their effect on body systems Daily food choices using dietary guidelines Physical activities that improve health Safety procedures for given situations Stress management and coping strategies that promote individual well-being The effect of physical activity on emotional well-being Techniques related to physical exercise Evaluation of products and services using a range of considerations	**Student demonstrates a basic knowledge with some understanding of the following concepts in the core content and makes some connections with real life.** Health and hygiene practices to prevent disease Structure and function of the reproductive system Good health habits and their effect on body systems Daily food choices using dietary guidelines Physical activities that improve health Safety procedures for given situations Stress management and coping strategies that promote individual well-being The effect of physical activity on emotional well-being Techniques related to physical exercise Evaluation of products and services using a range of considerations	**Student demonstrates minimal understanding of the following concepts in the core content but makes few connections.** Health and hygiene practices to prevent disease Structure and function of the reproductive system Good health habits and their effect on body systems Daily food choices using dietary guidelines Physical activities that improve health Safety procedures for given situations Stress management and coping strategies that promote individual well-being The effect of physical activity on emotional well-being Techniques related to physical exercise Evaluation of products and services using a range of considerations

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Concepts **(Cont'd)**	Financial management practices for achieving short- and long-term goals Importance of work to society and factors that impact job/career opportunities in various communities and global regions Communication skills needed for seeking a job Individual work habits and work ethic and their connection to success Impact of technology on the workplace	Financial management practices for achieving short- and long-term goals Importance of work to society and factors that impact job/career opportunities in various communities and global regions Communication skills needed for seeking a job Individual work habits and work ethic and their connection to success Impact of technology on the workplace	Financial management practices for achieving short- and long-term goals Importance of work to society and factors that impact job/career opportunities in various communities and global regions Communication skills needed for seeking a job Individual work habits and work ethic and their connection to success Impact of technology on the workplace	Financial management practices for achieving short- and long-term goals Importance of work to society and factors that impact job/career opportunities in various communities and global regions Communication skills needed for seeking a job
Services	**Student demonstrates extensive understanding of services and resources and the effective application of information to solve problems.** Community agencies and non-profit organizations that provide services Information to examine health-related problems, conserve resources, and reduce community environmental problems	**Student demonstrates a broad understanding of how to access services and resources and the effective application of this information.** Community agencies and non-profit organizations that provide services Information to examine health-related problems, conserve resources, and reduce community environmental problems	**Student demonstrates basic knowledge of services and resources and a basic understanding of how to access them.** Community agencies and non-profit organizations that provide services Information to examine health-related problems, conserve resources, and reduce community environmental problems	**Student shows minimal knowledge of services and resources and minimal understanding of how to access them.** Community agencies and non-profit organizations that provide services Information to examine health-related problems, conserve resources, and reduce community environmental problems

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Relationships	Student demonstrates and applies an extensive understanding of relationships and communicates this effectively. Good team skills and group behaviors Strategies for effective group function Impact of both spectator and participant behaviors on a sporting event	Student demonstrates a broad understanding of relationships and applies or communicates this effectively. Good team skills and group behaviors Strategies for effective group function Impact of both spectator and participant behaviors on a sporting event	Student demonstrates a basic knowledge with some understanding of relationships. Good team skills and group behaviors Strategies for effective group function Impact of both spectator and participant behaviors on a sporting event	Student demonstrates minimal knowledge of relationships. Good team skills and group behaviors Strategies for effective group function Impact of both spectator and participant behaviors on a sporting event
Decision Making	Student demonstrates extensive understanding and application of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather and analyze information Propose alternative solutions Predict consequences of solutions Analyze merit of alternatives Select and defend decision or choice	Student demonstrates and applies decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather information Propose alternative solutions Predict consequences of solutions Analyze merit of alternatives Select and defend decision or choice	Student demonstrates a basic knowledge of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify problem or issue Determine expected outcome Identify available resources Gather information Propose alternative solutions Predict consequences of solutions Select decision or choice	Student demonstrates minimal knowledge of decision-making processes to support choices (i.e., health, fitness, consumer, career). Identify problem or issue Determine expected outcome Identify available resources Gather information Select decision or choice

GRADE 10 PRACTICAL LIVING/VOCATIONAL STUDIES				
	DISTINGUISHED	**PROFICIENT**	**APPRENTICE**	**NOVICE**
Life Skills	**Student demonstrates an extensive understanding of the following life skills and makes insightful applications.** Strategies for emotional, mental, and social well-being Maintenance of individual physical well-being Consumerism as identified in the core content Post-secondary opportunities and the world of work	Student demonstrates a broad understanding of the following life skills and makes connections/applications to solve problems. Strategies for emotional, mental, and social well-being Maintenance of individual physical well-being Consumerism as identified in the core content Post-secondary opportunities and the world of work	**Student demonstrates a basic knowledge with some understanding of the following life skills but may not consistently apply concepts.** Strategies for emotional, mental, and social well-being Maintenance of individual physical well-being Consumerism as identified in the core content Post-secondary opportunities and the world of work	**Student demonstrates minimal understanding of the following life skills.** Strategies for emotional, mental, and social well -being Maintenance of individual physical well-being Consumerism as identified in the core content Post-secondary opportunities and the world of work
Concepts	Student demonstrates an extensive understanding of the following concepts in the core content and makes comprehen-sive connections/applications to real life. Impact of good health habits on the body systems and personal wellness Relationship of reproduction and sexuality to individual well-being Connection between good nutrition and longevity Appropriate safety procedures for emergency situations	Student demonstrates a broad understanding of the following concepts in the core content and makes logical connections/applications to real life. Impact of good health habits on the body systems and personal wellness Relationship of reproduction and sexuality to individual well-being Connection between good nutrition and longevity Appropriate safety procedures for emergency situations	Student demonstrates a basic knowledge with some understanding of the following concepts in the core content and makes some connections to real life. Impact of good health habits on the body systems and personal wellness Relationship of reproduction and sexuality to individual well-being Connection between good nutrition and longevity Appropriate safety procedures for emergency situations	Student demonstrates minimal understanding of the following concepts in the core content but makes few connections to real life. Impact of good health habits on the body systems and personal wellness Relationship of reproduction and sexuality to individual well-being Connection between good nutrition and longevity Appropriate safety procedures for emergency situations

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Concepts (Con't)	Strategies that lead to physical, mental, and emotional health Appropriate physical activity for lifetime fitness Principles of fitness training and conditioning Consumer decisions and information for use of appropriate strategies Financial management practices identified in the core content for achieving short- and long-term goals Jobs and careers in various occupational areas Social and economic impact of work on the individual, family, and society Impact of technology on the workplace and job market Post-secondary options and various career paths Skills identified in the core content needed for seeking, obtaining, and changing jobs	Strategies that lead to physical, mental, and emotional health Appropriate physical activity for lifetime fitness Principles of fitness training and conditioning Consumer decisions and information for use of appropriate strategies Financial management practices identified in the core content for achieving short- and long-term goals Jobs and careers in various occupational areas Social and economic impact of work on the individual, family, and society Impact of technology on the workplace and job market Post-secondary options and various career paths Skills identified in the core content needed for seeking, obtaining, and changing jobs	Strategies that lead to physical, mental, and emotional health Appropriate physical activity for lifetime fitness Principles of fitness training and conditioning Consumer decisions and information for use of appropriate strategies Financial management practices identified in the core content for achieving short- and long-term goals Jobs and careers in various occupational areas Social and economic impact of work on the individual, family, and society Impact of technology on the workplace and job market Post-secondary options and various career paths Skills identified in the core content needed for seeking, obtaining, and changing jobs	Strategies that lead to physical, mental, and emotional health Appropriate physical activity for lifetime fitness Principles of fitness training and conditioning Consumer decisions and information for use of appropriate strategies Financial management practices identified in the core content for achieving short- and long-term goals Jobs and careers in various occupational areas Social and economic impact of work on the individual, family, and society Impact of technology on the workplace and job market Post-secondary options and various career paths Skills identified in the core content needed for seeking, obtaining, and changing jobs
Services and Resources	**Student demonstrates an extensive understanding of services and resources and the effective application of information to solve problems.** Roles, responsibilities, and services of health agencies Health-related problems, and managing and conserving resources, and reducing community environmental problems	**Student demonstrates a broad understanding of how to access services and resources and the effective connection/application of this information.** Roles, responsibilities, and services of health agencies Health-related problems, and managing and conserving resources, and reducing community environmental problems	**Student demonstrates basic knowledge of services and resources and a basic understanding of how to access them.** Roles, responsibilities, and services of health agencies Health-related problems, and managing and conserving resources, and reducing community environmental problems	**Student demonstrates minimal knowledge of services and resources and minimal understanding of how to access them.** Roles, responsibilities, and services of health agencies Health-related problems, and managing and conserving resources, and reducing community environmental problems

	DISTINGUISHED	PROFICIENT	APPRENTICE	NOVICE
Relationships	Student demonstrates and applies an extensive understanding of relationships and communicates this effectively. Importance of good team skills in society Responsibilities and skills needed to work with individuals and in groups throughout life Relationship between spectators and participants during organized games and the importance of practicing rules, fair play, and cooperation	**Student demonstrates a broad understanding of relationships and connects/applies or communicates this effectively.** Importance of good team skills in society Responsibilities and skills needed to work with individuals and in groups throughout life Relationship between spectators and participants during organized games and the importance of practicing rules, fair play, and cooperation	**Student demonstrates a basic knowledge with some understanding of relationships.** Importance of good team skills in society Responsibilities and skills needed to work with individuals and in groups throughout life Relationship between spectators and participants during organized games and the importance of practicing rules, fair play, and cooperation	**Student demonstrates minimal knowledge of relationships.** Importance of good team skills in society Responsibilities and skills needed to work with individuals and in groups throughout life Relationship between spectators and participants during organized games and the importance of practicing rules, fair play, and cooperation
Decision Making	**Student demonstrates extensive understanding and application of decision-making processes to support choices (i.e., health, fitness, consumer, career).** Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather information Propose alternative solutions Predict consequences of solutions Analyze and prioritize alternatives Select and defend decision or choice Monitor and adjust decision, if need	**Student demonstrates and connects/applies decision-making processes to support choices (i.e., health, fitness, consumer, career).** Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather information Propose alternative solutions Predict consequences of solutions Analyze and prioritize alternatives Select and defend decision or choice Monitor and adjust decision, if needed	**Student demonstrates a basic knowledge with some understanding of decision-making processes to support choices (i.e., health, fitness, consumer, career).** Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather information Propose alternative solutions Predict consequences of solutions Analyze and prioritize alternatives **Select and defend decision or choice** Monitor and adjust decision, if needed	**Student demonstrates minimal knowledge of decision-making processes to support choices (i.e., health, fitness, consumer, career).** Identify problem or issue Determine expected outcome Identify available and most appropriate resources Gather information Propose alternative solutions Predict consequences of solutions Analyze and prioritize alternatives Select and defend decision or choice Monitor and adjust decision, if needed

ATTACHMENT J: Performance Level Scale Scores and Impact Data – Graphic Presentation

READING

FIGURE RD – 04A – Cut-Points and Performance Level Impact Data
FIGURE RD – 04B – Long-Term Accountability Impact
FIGURE RD – 07A – Cut-Points and Performance Level Impact Data
FIGURE RD – 07B – Long-Term Accountability Impact
FIGURE RD – 10A – Cut-Points and Performance Level Impact Data
FIGURE RD – 10B – Long-Term Accountability Impact

MATHEMATICS

FIGURE MA – 05A – Cut-Points and Performance Level Impact Data
FIGURE MA – 05B – Long-Term Accountability Impact
FIGURE MA – 08A – Cut-Points and Performance Level Impact Data
FIGURE MA – 08B – Long-Term Accountability Impact
FIGURE MA – 11A – Cut-Points and Performance Level Impact Data
FIGURE MA – 11B – Long-Term Accountability Impact

SCIENCE

FIGURE SC – 04A – Cut-Points and Performance Level Impact Data
FIGURE SC – 04B – Long-Term Accountability Impact
FIGURE SC – 07A – Cut-Points and Performance Level Impact Data
FIGURE SC – 07B – Long-Term Accountability Impact
FIGURE SC – 11A – Cut-Points and Performance Level Impact Data
FIGURE SC – 11B – Long-Term Accountability Impact

SOCIAL STUDIES

FIGURE SS – 05A – Cut-Points and Performance Level Impact Data
FIGURE SS – 05B – Long-Term Accountability Impact
FIGURE SS – 08A – Cut-Points and Performance Level Impact Data
FIGURE SS – 08B – Long-Term Accountability Impact
FIGURE SS – 11A – Cut-Points and Performance Level Impact Data
FIGURE SS – 11B – Long-Term Accountability Impact

ARTS & HUMANITIES

FIGURE AH – 05A – Cut-Points and Performance Level Impact Data
FIGURE AH – 05B – Long-Term Accountability Impact
FIGURE AH – 08A – Cut-Points and Performance Level Impact Data
FIGURE AH – 08B – Long-Term Accountability Impact
FIGURE AH – 11A – Cut-Points and Performance Level Impact Data
FIGURE AH – 11B – Long-Term Accountability Impact

PRACTICAL LIVING / VOCATIONAL STUDIES

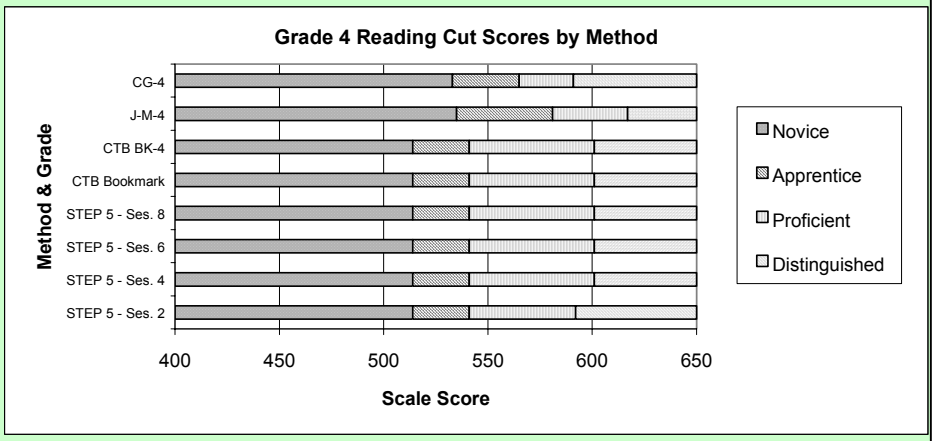
FIGURE PL – 05A – Cut-Points and Performance Level Impact Data
FIGURE PL – 05B – Long-Term Accountability Impact
FIGURE PL – 08A – Cut-Points and Performance Level Impact Data
FIGURE PL – 08B – Long-Term Accountability Impact
FIGURE PL – 10A – Cut-Points and Performance Level Impact Data
FIGURE PL – 10B – Long-Term Accountability Impact

FIGURE RD – 04A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Reading

Grade 4	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	514.0	514.0	514.0	514.0	514	535	533
APP/PRO	541.0	541.0	541.0	541.0	541	581	565
PRO/DIS	592.0	601.0	601.0	601.0	601	617	591



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 4	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	16.6	16.6	16.6	16.6	17.8	36.1	35.0
Apprentice	26.2	26.2	26.2	26.2	25.8	48.7	35.7
Proficient	48.7	51.9	51.9	51.9	51.2	13.3	20.4
Distinguished	8.6	5.3	5.3	5.3	5.3	2.0	9.0

100

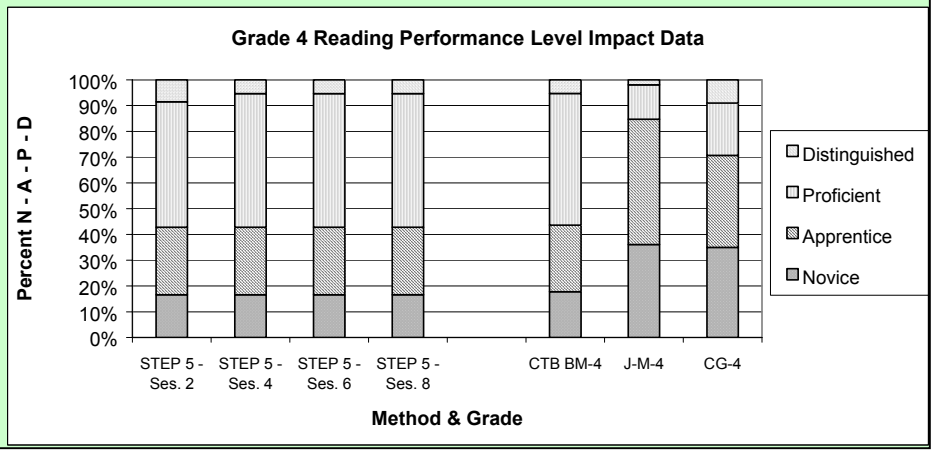


FIGURE RD – 04B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Reading

Performance Standard Cut-Scores

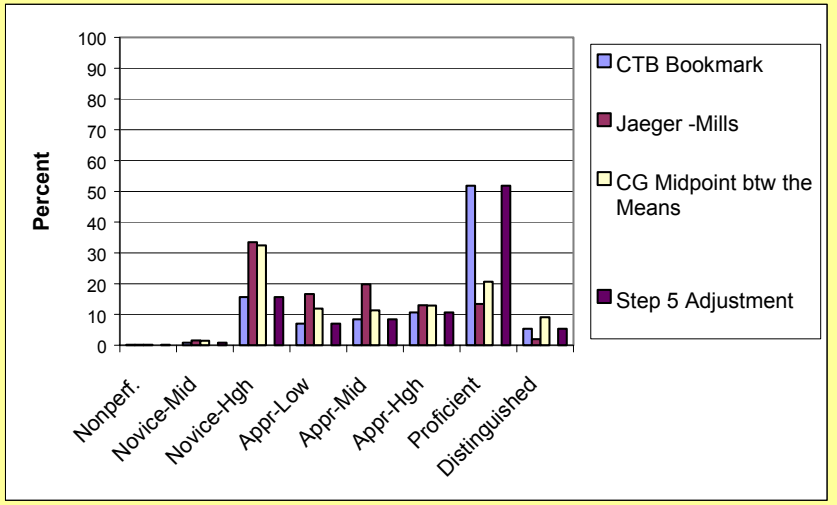
Grade 4	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	514	535	533	514	<
APP/PRO	541	581	565	541	<
PRO/DIS	601	617	591	601	<

Sub Performance Standard Cut-Scores

Grade 4	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	451	465	464	451
NOV/APP	514	535	533	514
App L/M	523	550	544	523
App M/H	532	566	554	532
APP/PRO	541	581	565	541
PRO/DIS	601	617	591	601

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.15	0.15	0.15	0.15
Novice-Mid	0.79	1.54	1.45	0.79
Novice-Hgh	15.68	33.47	32.45	15.68
Appr-Low	7.02	16.62	11.9	7.02
Appr-Mid	8.41	19.79	11.33	8.41
Appr-Hgh	10.72	12.98	12.92	10.72
Proficient	51.88	13.46	20.67	51.88
Distinguished	5.35	1.99	9.13	5.35
Total	100	100	100	100
Estimated Index	80.0	54.1	64.0	80.0



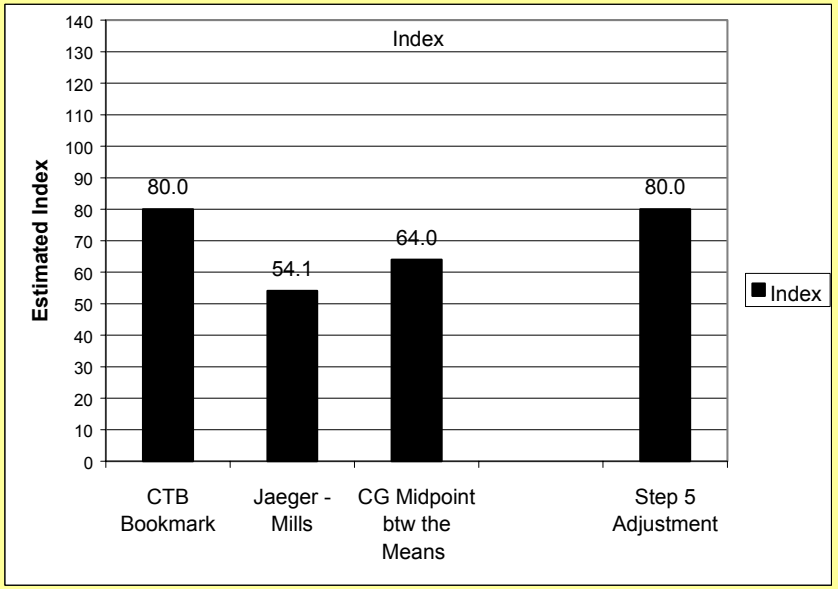
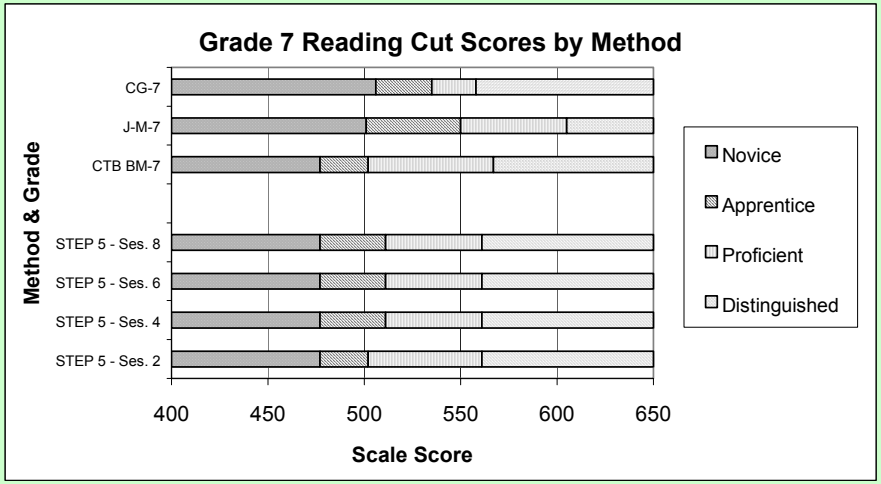


FIGURE RD – 07A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Reading

Grade 7	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	477.0	477.0	477.0	477.0	477	501	506
APP/PRO	502.0	511.0	511.0	511.0	502	550	535
PRO/DIS	561.0	561.0	561.0	561.0	567	605	558



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 7	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	15.3	15.3	15.3	15.3	16.4	37.9	42.9
Apprentice	22.8	33.8	33.8	33.8	22.5	51.5	34.4
Proficient	55.8	44.9	44.9	44.9	57.2	10.2	15.4
Distinguished	6.1	6.1	6.1	6.1	3.8	0.3	7.3

100

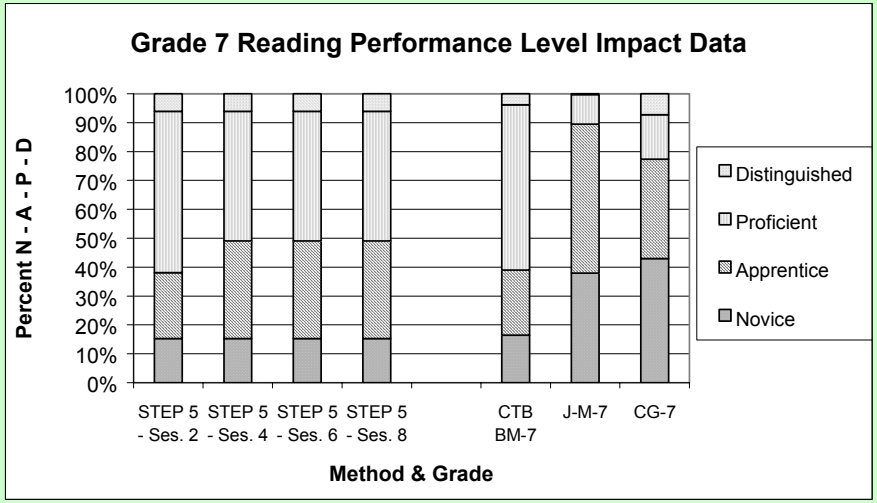


FIGURE RD – 07B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method
Reading

Performance Standard Cut-Scores

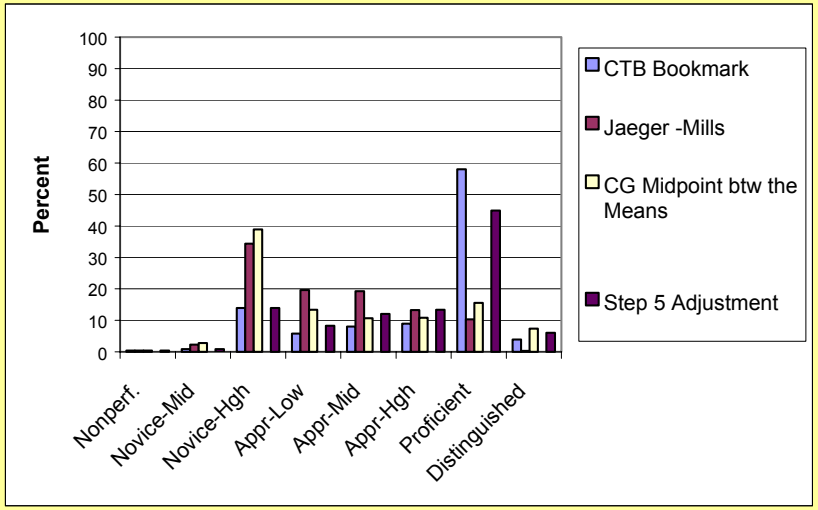
Grade 7	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	477	501	506	477	<
APP/PRO	502	550	535	511	<
PRO/DIS	567	605	558	561	<

Sub Performance Standard Cut-Scores

Grade 7	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	426	442	446	426
NOV/APP	477	501	506	477
App L/M	485	517	516	488
App M/H	494	534	525	500
APP/PRO	502	550	535	511
PRO/DIS	567	605	558	561

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.38	0.38	0.38	0.38
Novice-Mid	0.9	2.26	2.83	0.9
Novice-Hgh	13.99	34.44	38.92	13.99
Appr-Low	5.86	19.65	13.37	8.28
Appr-Mid	8.03	19.32	10.66	12.05
Appr-Hgh	8.92	13.28	10.83	13.42
Proficient	58.01	10.33	15.61	44.89
Distinguished	3.91	0.34	7.40	6.09
Total	100	100	100	100
Estimated Index	81.5	50.1	56.9	78.4



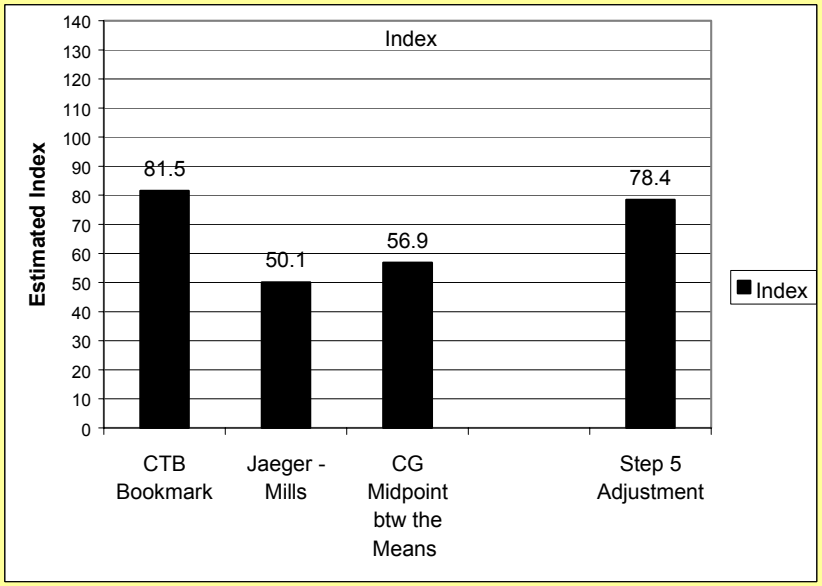
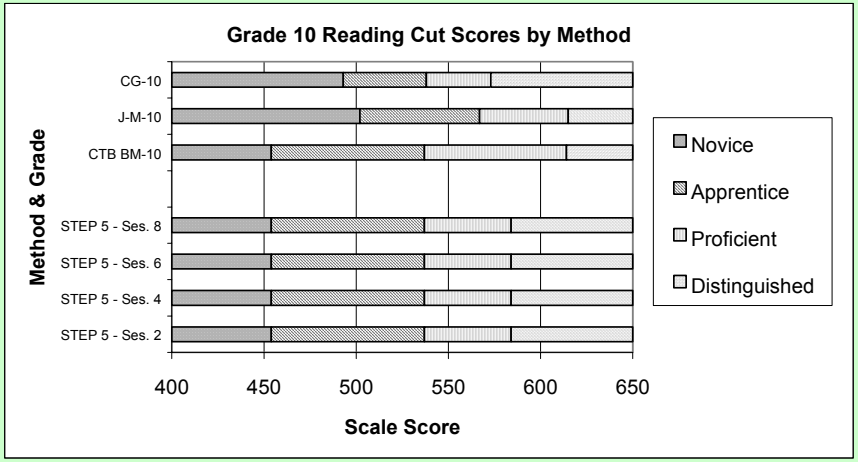


FIGURE RD – 10A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Reading

Grade 10	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	454	454	454	454	454	502	493
APP/PRO	537	537	537	537	537	567	538
PRO/DIS	584	584	584	584	614	615	573



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 10	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	17.6	17.6	17.6	17.6	18.7	47.9	41.4
Apprentice	54.9	54.9	54.9	54.9	54.2	40.1	32.3
Proficient	20.8	20.8	20.8	20.8	25.3	10.3	16.7
Distinguished	6.7	6.7	6.7	6.7	1.8	1.7	9.6

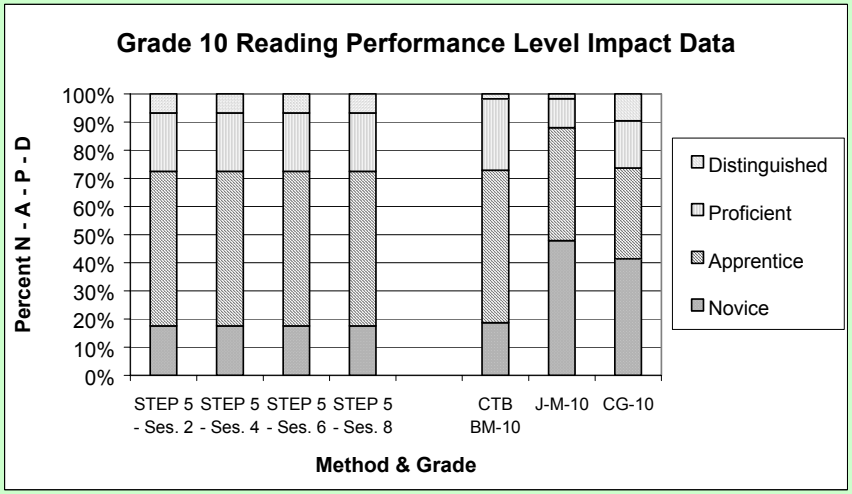


FIGURE RD – 10B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Reading

Performance Standard Cut-Scores

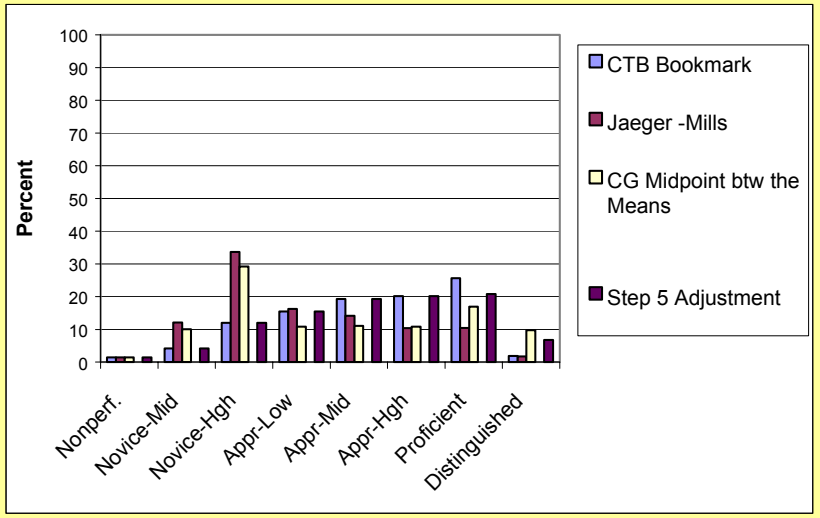
Grade 10	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	454	502	493	454	<
APP/PRO	537	567	538	537	<
PRO/DIS	614	615	573	584	<

Sub Performance Standard Cut-Scores

Grade 10	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	411	443	437	411
NOV/APP	454	502	493	454
App L/M	482	524	508	482
App M/H	509	545	523	509
APP/PRO	537	567	538	537
PRO/DIS	614	615	573	584

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.42	1.42	1.42	1.42
Novice-Mid	4.18	12.1	10.03	4.18
Novice-Hgh	11.99	33.66	29.15	11.99
Appr-Low	15.46	16.25	11	15.46
Appr-Mid	19.3	14.08	11.08	19.30
Appr-Hgh	20.18	10.34	10.83	20.18
Proficient	25.62	10.46	17	20.76
Distinguished	1.85	1.69	9.71	6.71
Total	100	100	100	100
Estimated Index	65.8	46.4	59.1	67.7



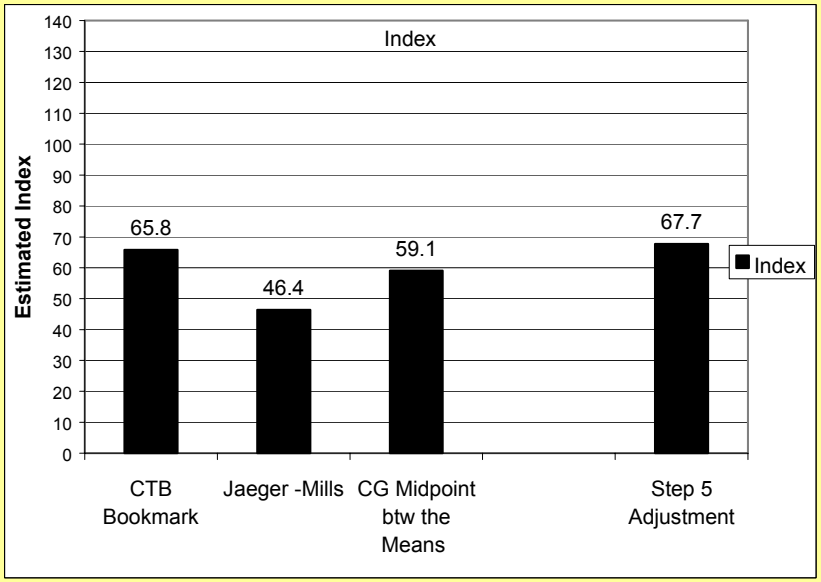
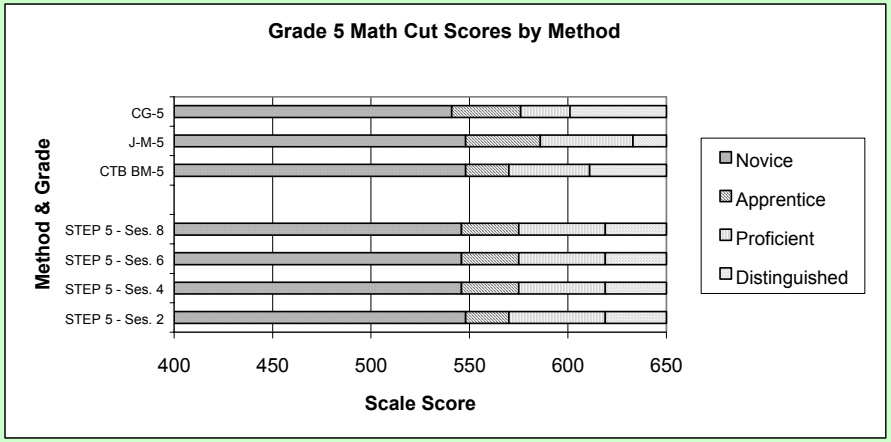


FIGURE MA – 05A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Mathematics

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	548.0	546.0	546.0	546.0	548	548	541
APP/PRO	570.0	575.0	575.0	575.0	570	586	576
PRO/DIS	619.0	619.0	619.0	619.0	611	633	601



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	40.7	38.7	38.7	38.7	41.3	41.3	35.1
Apprentice	23.7	30.1	30.1	30.1	23.5	38.1	35.4
Proficient	30.9	26.5	26.5	26.5	28.4	18.4	18.4
Distinguished	4.7	4.7	4.7	4.7	6.8	2.3	11.1

100

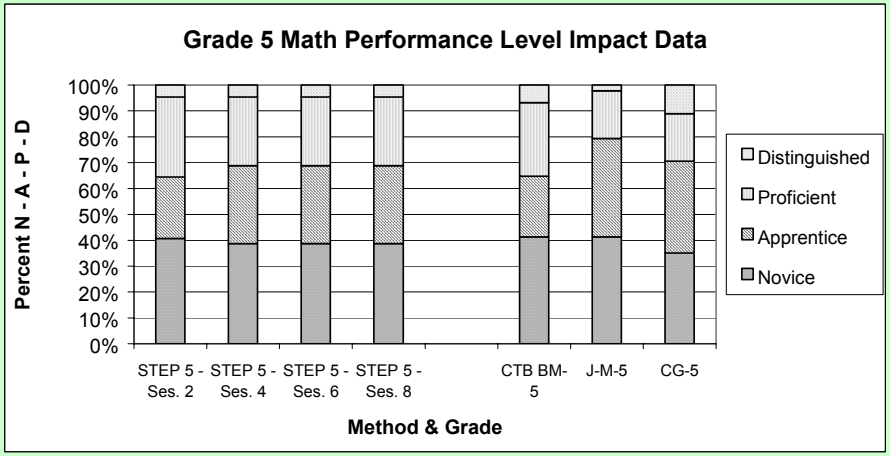


FIGURE MA – 05B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Mathematics

Performance Standard Cut-Scores

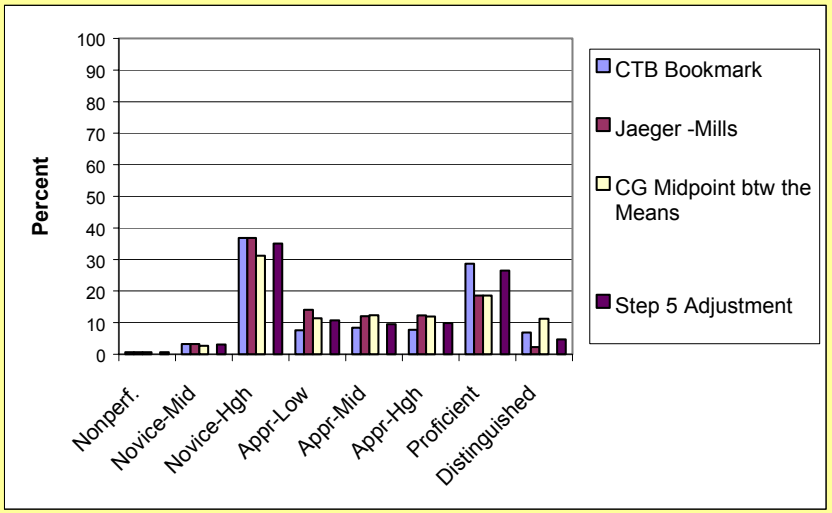
Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	548	548	541	546	<
APP/PRO	570	586	576	575	<
PRO/DIS	611	633	601	619	<

Sub Performance Standard Cut-Scores

Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	474	474	469	472
NOV/APP	548	548	541	546
App L/M	555	561	553	556
App M/H	563	573	564	565
APP/PRO	570	586	576	575
PRO/DIS	611	633	601	619

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.62	0.62	0.62	0.62
Novice-Mid	3.24	3.24	2.68	3.03
Novice-Hgh	36.85	36.85	31.16	35.05
Appr-Low	7.57	14.07	11.39	10.77
Appr-Mid	8.42	12.07	12.38	9.54
Appr-Hgh	7.73	12.3	11.98	9.82
Proficient	28.7	18.58	18.55	26.50
Distinguished	6.87	2.27	11.24	4.67
Total	100	100	100	100
Estimated Index	62.6	54.5	64.3	60.4



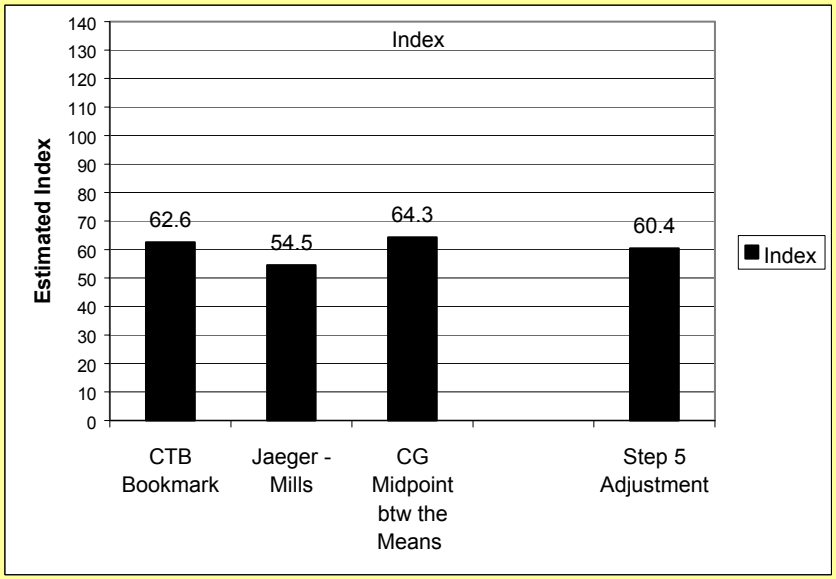
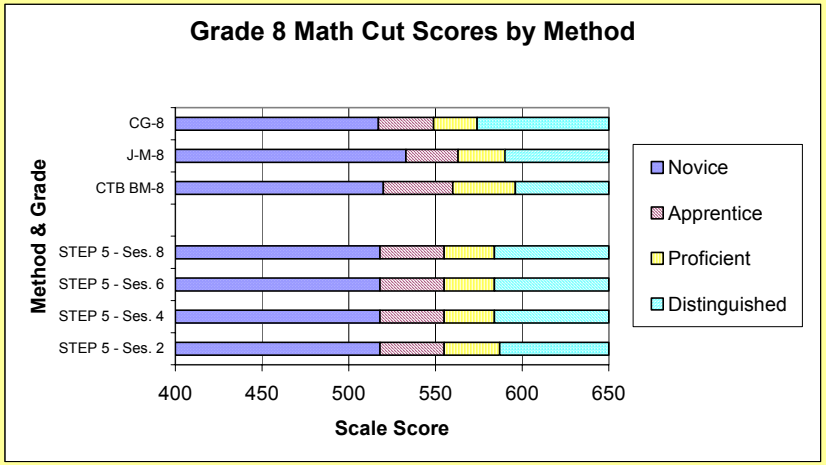


FIGURE MA – 08A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Mathematics

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	518	518	518	518	520	533	517
APP/PRO	555	555	555	555	560	563	549
PRO/DIS	587	584	584	584	596	590	574



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	34.5	34.5	34.5	34.5	37.4	51.9	43.2
Apprentice	40.3	40.3	40.3	40.3	42.8	30.5	30.9
Proficient	20.7	19.7	19.7	19.7	17.6	14.1	17.9
Distinguished	4.4	5.5	5.5	5.5	2.2	3.6	8.0

100

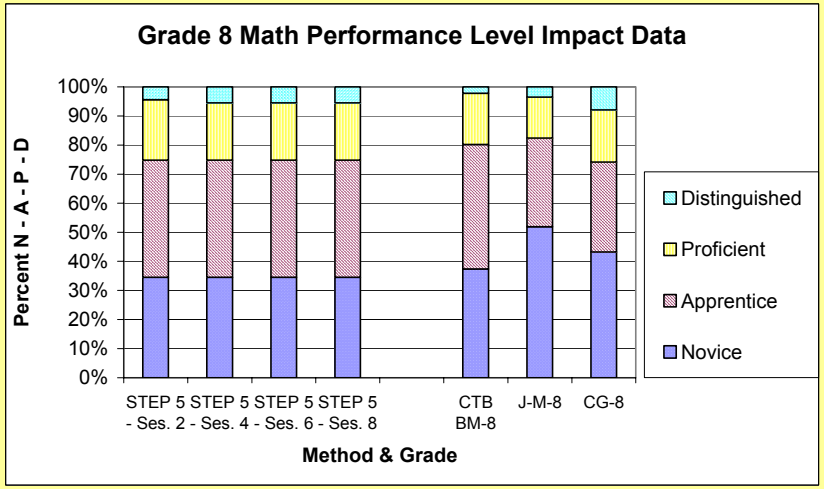


FIGURE MA – 08B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Mathematics

Performance Standard Cut-Scores

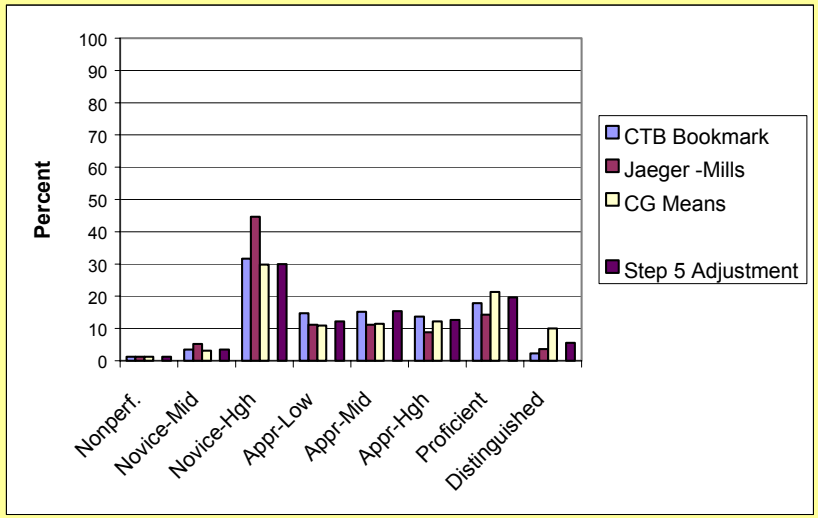
Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	520	533	517	518	<
APP/PRO	560	563	549	555	<
PRO/DIS	596	590	574	584	<

Sub Performance Standard Cut-Scores

Grade 8	CTB Bookmark	Jaeger -Mills	CG Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	455	464	453	454
NOV/APP	520	533	517	518
App L/M	533	543	528	530
App M/H	547	553	538	543
APP/PRO	560	563	549	555
PRO/DIS	596	590	574	584

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.18	1.18	1.18	1.18
Novice-Mid	3.41	5.21	3.13	3.41
Novice-Hgh	31.69	44.64	29.8	29.94
Appr-Low	14.75	11.11	10.91	12.19
Appr-Mid	15.16	11.16	11.45	15.42
Appr-Hgh	13.68	8.79	12.18	12.70
Proficient	17.87	14.3	21.3	19.66
Distinguished	2.26	3.61	10.05	5.50
Total	100	100	100	100
Estimated Index	55.7	49.8	64.5	59.9



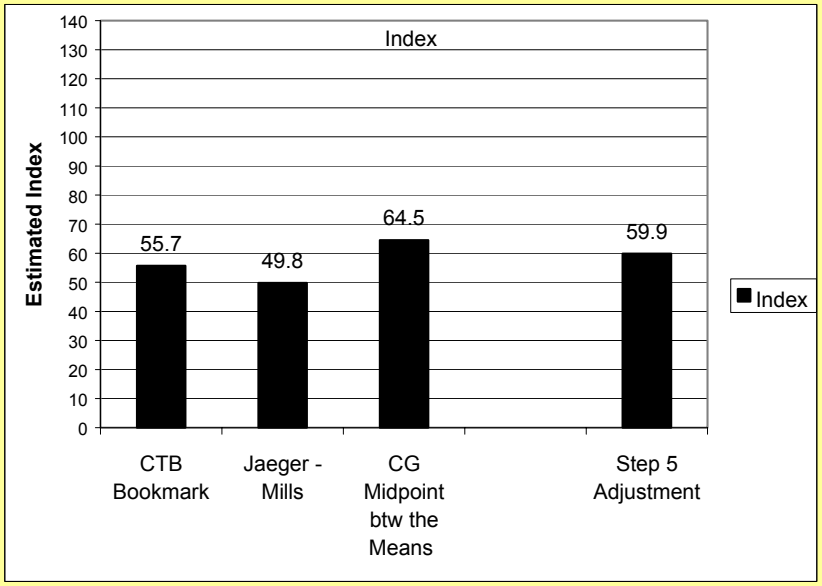
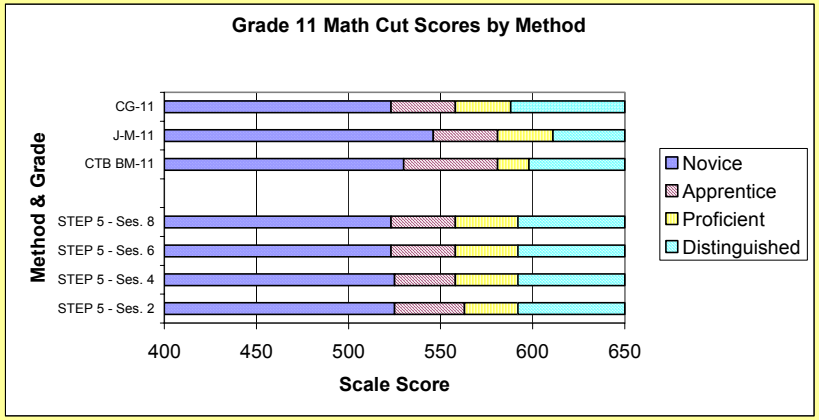


FIGURE MA – 11A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

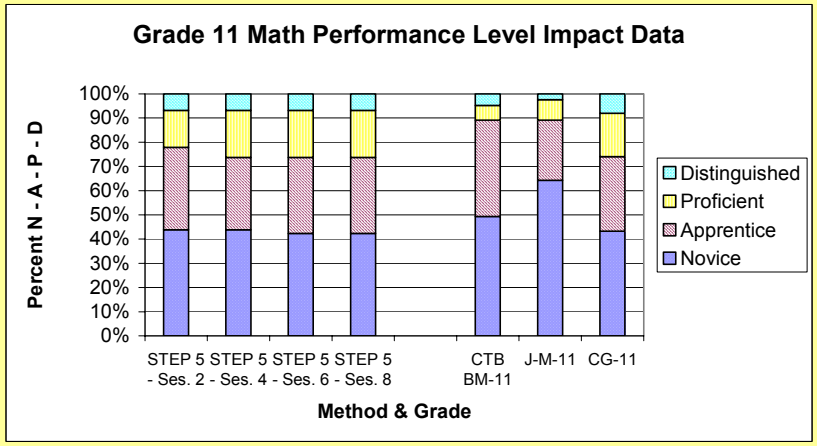
Mathematics

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	525	525	523	523	530	546	523
APP/PRO	563	558	558	558	581	581	558
PRO/DIS	592	592	592	592	598	611	588



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	43.9	43.9	42.4	42.4	49.3	64.2	43.2
Apprentice	34.1	29.9	31.3	31.3	39.8	24.9	30.9
Proficient	15.2	19.5	19.5	19.5	6.1	8.6	17.9
Distinguished	6.8	6.8	6.8	6.8	4.8	2.3	8.0



100

FIGURE MA – 11B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Mathematics

Performance Standard Cut-Scores

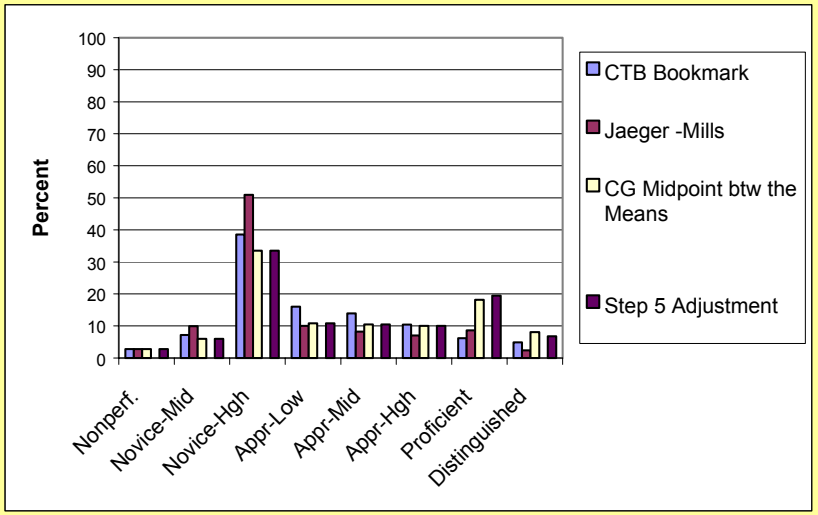
Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	530	546	523	523	<
APP/PRO	581	581	558	558	<
PRO/DIS	598	611	588	592	<

Sub Performance Standard Cut-Scores

Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	462	472	457	457
NOV/APP	530	546	523	523
App L/M	547	558	535	535
App M/H	564	569	546	546
APP/PRO	581	581	558	558
PRO/DIS	598	611	588	592

Percent Students by Performance Standard (Spring 2000)

Nonperf.	2.83	2.83	2.83	2.83
Novice-Mid	7.19	9.94	6.02	6.02
Novice-Hgh	38.51	50.93	33.51	33.51
Appr-Low	16.02	10	11	10.82
Appr-Mid	13.94	8.22	10.52	10.52
Appr-Hgh	10.45	7.02	10	10.00
Proficient	6.16	8.68	18.21	19.45
Distinguished	4.9	2.38	8.09	6.85
Total	100	100	100	100
Estimated Index	47.1	41.1	57.7	57.2



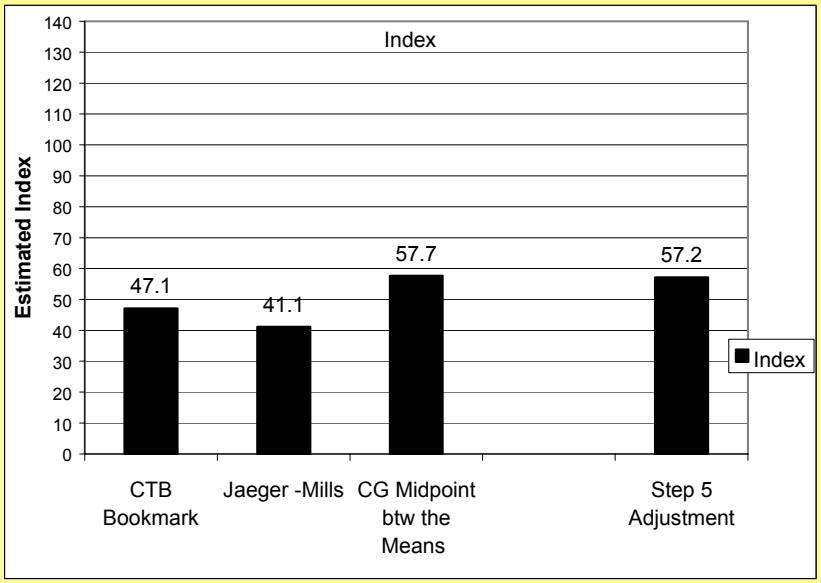
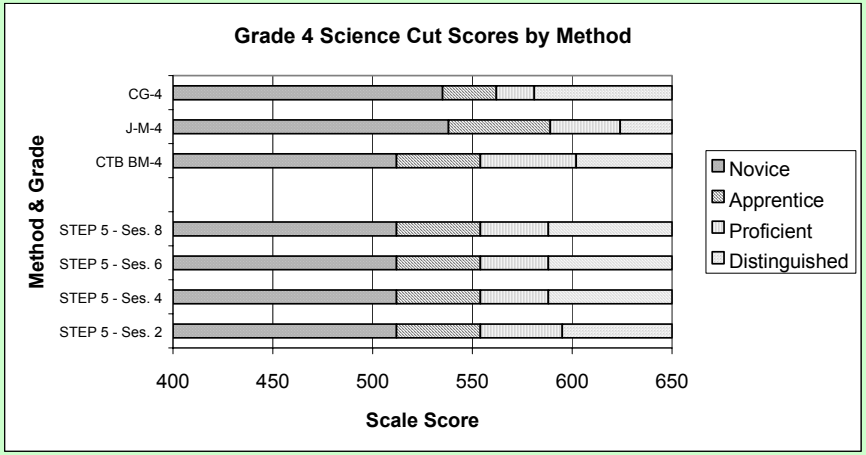


FIGURE SC – 04A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Science

Grade 4	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	512.0	512.0	512.0	512.0	512	538	535
APP/PRO	554.0	554.0	554.0	554.0	554	589	562
PRO/DIS	595.0	588.0	588.0	588.0	602	624	581



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 4	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	14.4	14.4	14.4	14.4	15.6	41.9	38.8
Apprentice	49.7	49.7	49.7	49.7	49.0	53.4	36.6
Proficient	32.8	30.4	30.4	30.4	33.6	4.4	16.5
Distinguished	3.1	5.5	5.5	5.5	1.8	0.3	8.0

100

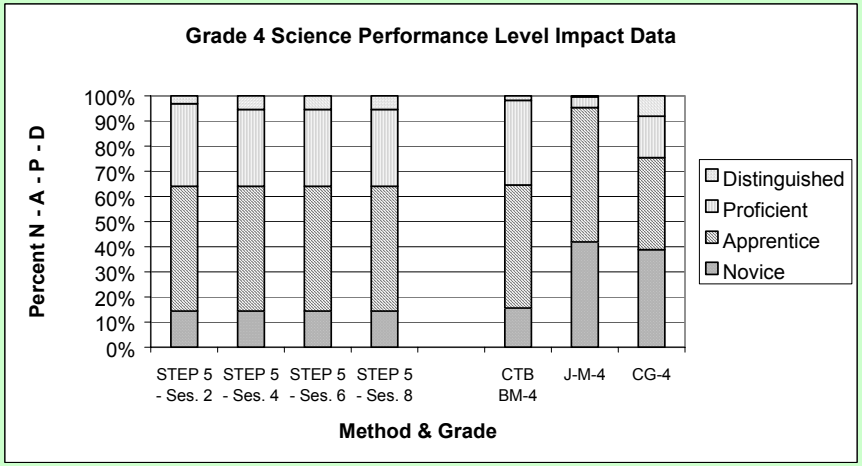


FIGURE SC – 04B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Science

Performance Standard Cut-Scores

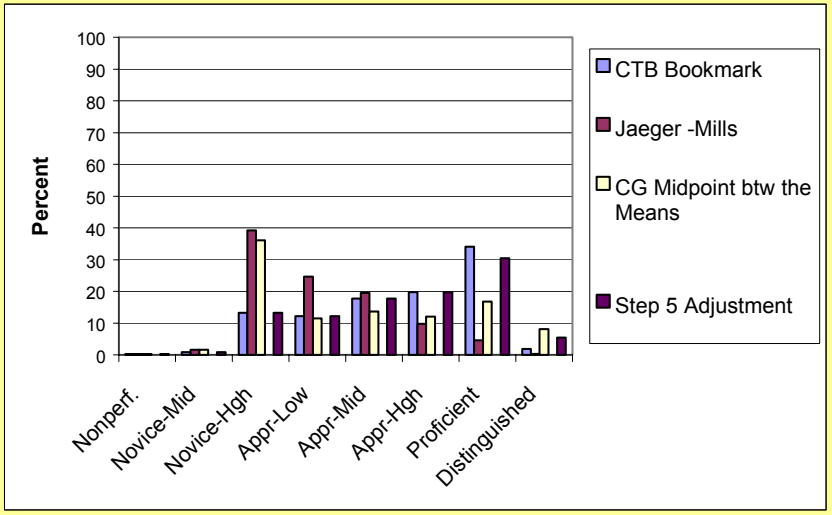
Grade 4	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	512	538	535	512	<
APP/PRO	554	589	562	554	<
PRO/DIS	602	624	581	588	<

Sub Performance Standard Cut-Scores

Grade 4	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	450	467	465	450
NOV/APP	512	538	535	512
App L/M	526	555	544	526
App M/H	540	572	553	540
APP/PRO	554	589	562	554
PRO/DIS	602	624	581	588

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.27	0.27	0.27	0.27
Novice-Mid	0.85	1.62	1.62	0.85
Novice-Hgh	13.26	39.22	36.04	13.26
Appr-Low	12.23	24.69	11.52	12.23
Appr-Mid	17.75	19.49	13.62	17.75
Appr-Hgh	19.75	9.77	12.03	19.75
Proficient	34.05	4.61	16.78	30.44
Distinguished	1.84	0.33	8.12	5.45
Total	100	100	100	100
Estimated Index	71.5	44.9	60.1	73.0



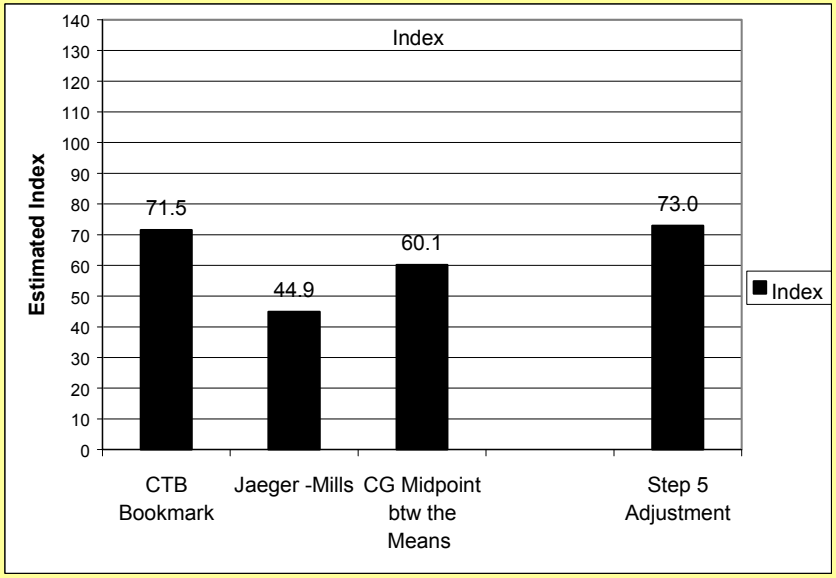
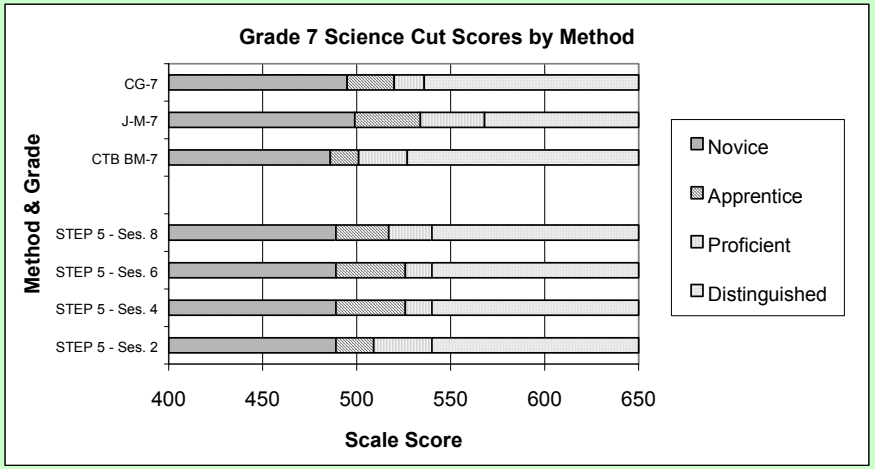


FIGURE SC – 07A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Science

Grade 7	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	489	489	489	489	486	499	495
APP/PRO	509	526	526	517	501	534	520
PRO/DIS	540	540	540	540	527	568	536



Impact Data -- Percentages of Students in eachPerformance Level by Standard Setting Method

Grade 7	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	32.9	32.9	32.9	32.9	29.9	46.7	41.4
Apprentice	28.3	49.9	49.9	38.8	19.5	42.9	34.9
Proficient	31.8	10.2	10.2	21.3	34.5	9.5	14.4
Distinguished	7.0	7.0	7.0	7.0	16.1	0.9	9.3

100

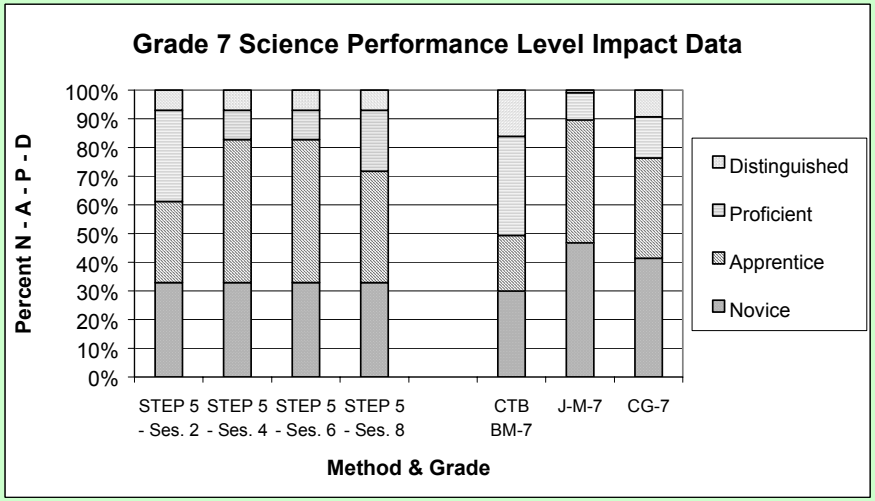


FIGURE SC – 07B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Science

Performance Standard Cut-Scores

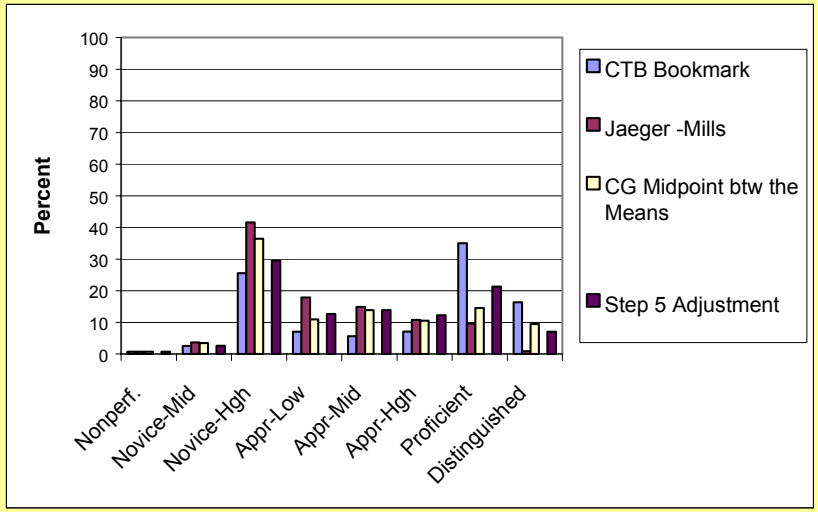
Grade 7	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	486	499	495	489	<
APP/PRO	501	534	520	517	<
PRO/DIS	527	568	536	540	<

Sub Performance Standard Cut-Scores

Grade 7	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	432	441	438	434
NOV/APP	486	499	495	489
App L/M	491	511	503	498
App M/H	496	522	512	508
APP/PRO	501	534	520	517
PRO/DIS	527	568	536	540

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.77	0.77	0.77	0.77
Novice-Mid	2.5	3.68	3.42	2.65
Novice-Hgh	25.59	41.53	36.4	29.48
Appr-Low	7.03	17.85	11	12.62
Appr-Mid	5.63	14.84	13.9	13.89
Appr-Hgh	7.12	10.79	10.56	12.27
Proficient	35.02	9.65	15	21.31
Distinguished	16.34	0.89	9.43	7.01
Total	100	100	100	100
Estimated Index	76.8	46.8	58.8	62.3



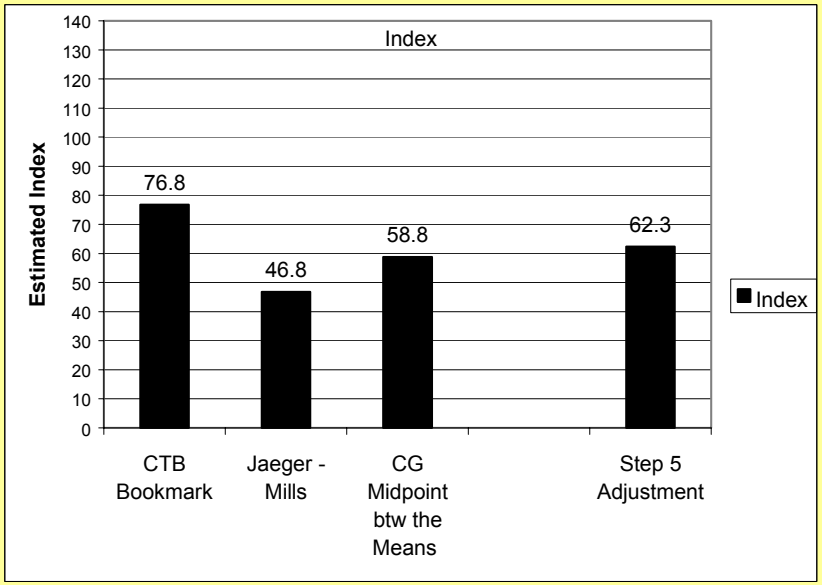
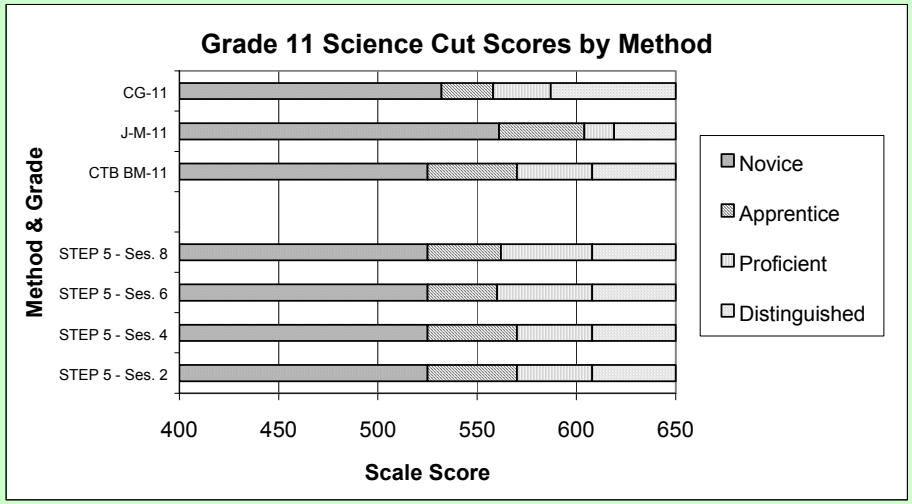


FIGURE SC – 11A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Science

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	525	525	525	525	525	561	532
APP/PRO	570	570	560	562	570	604	558
PRO/DIS	608	608	608	608	608	619	587



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	30.8	30.8	30.8	30.8	31.9	71.9	38.7
Apprentice	49.9	49.9	39.2	41.9	49.1	25.5	30.4
Proficient	17.3	17.3	28.0	25.2	17.0	1.7	23.0
Distinguished	2.1	2.1	2.1	2.1	2.0	0.9	7.9

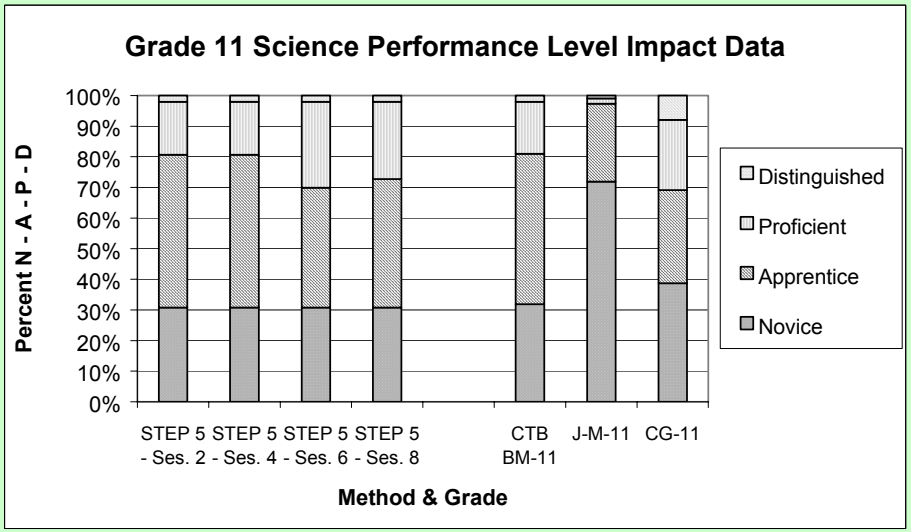


FIGURE SC – 11B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Science

Performance Standard Cut-Scores

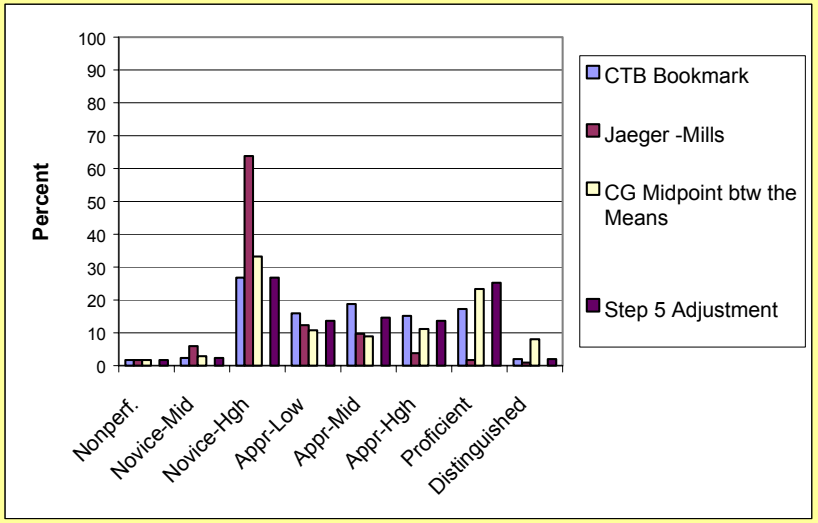
Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	525	561	532	525	<
APP/PRO	570	604	558	562	<
PRO/DIS	608	619	587	608	<

Sub Performance Standard Cut-Scores

Grade 11	CTB Bookmark	Jaeger -Mills	CG Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	458	482	463	458
NOV/APP	525	561	532	525
App L/M	540	575	541	537
App M/H	555	590	549	550
APP/PRO	570	604	558	562
PRO/DIS	608	619	587	608

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.68	1.68	1.68	1.68
Novice-Mid	2.37	5.96	2.92	2.37
Novice-Hgh	26.77	63.83	33.18	26.77
Appr-Low	15.91	12.36	11	13.68
Appr-Mid	18.78	9.7	8.94	14.58
Appr-Hgh	15.17	3.79	11.16	13.64
Proficient	17.27	1.72	23	25.23
Distinguished	2.05	0.96	8.01	2.05
Total	100	100	100	100
Estimated Index	57.2	34.2	62.2	60.5



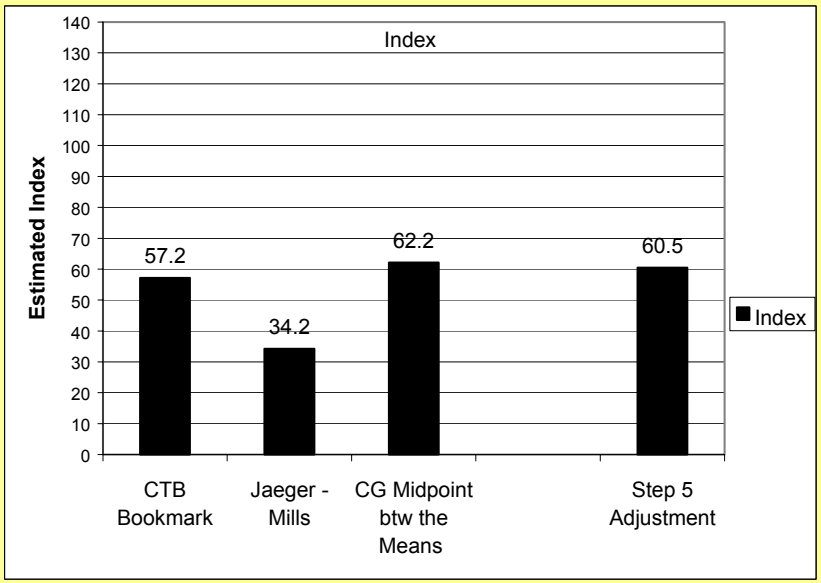
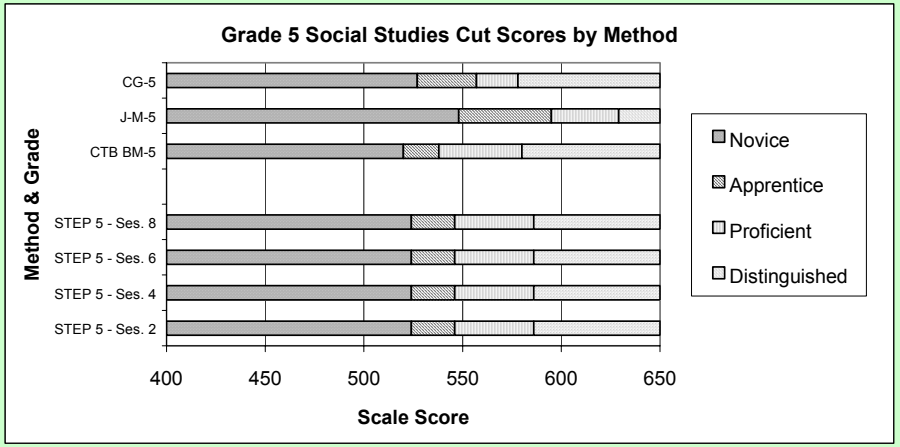


FIGURE SS – 05A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Social Studies

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	524	524	524	524	520	548	527
APP/PRO	546	546	546	546	538	595	557
PRO/DIS	586	586	586	586	580	629	578



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	34.7	34.7	34.7	34.7	30.5	62.4	38.5
Apprentice	25.5	25.5	25.5	25.5	21.1	33.1	34.3
Proficient	32.4	32.4	32.4	32.4	38.2	3.9	15.9
Distinguished	7.4	7.4	7.4	7.4	10.2	0.6	11.3

100

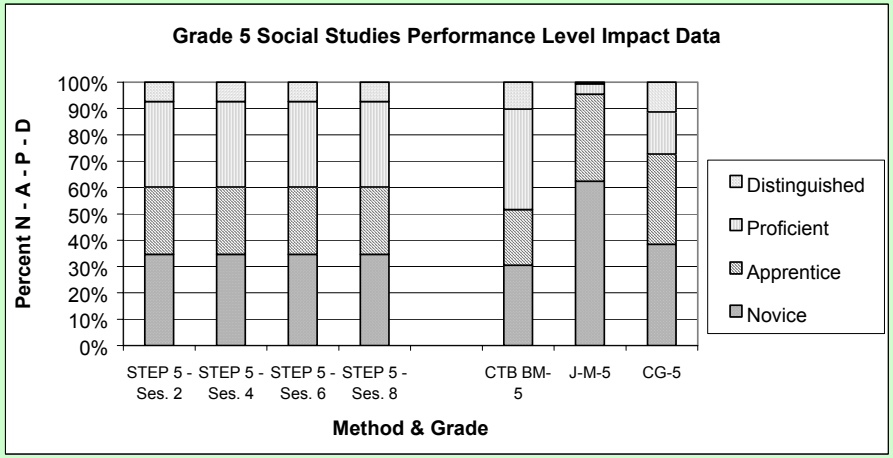


FIGURE SS – 05B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Social Studies

Performance Standard Cut-Scores

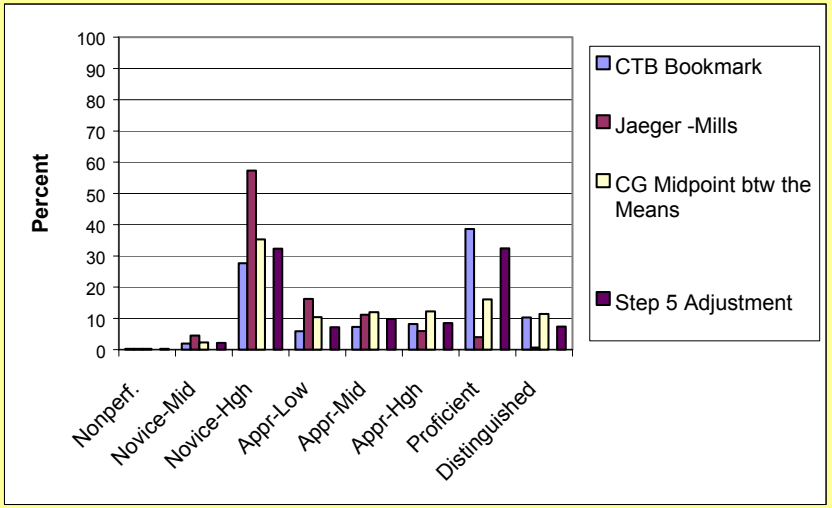
Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	520	548	527	524	<
APP/PRO	538	595	557	546	<
PRO/DIS	580	629	578	586	<

Sub Performance Standard Cut-Scores

Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	455	474	460	458
NOV/APP	520	548	527	524
App L/M	526	564	537	531
App M/H	532	579	547	539
APP/PRO	538	595	557	546
PRO/DIS	580	629	578	586

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.23	0.23	0.23	0.23
Novice-Mid	1.92	4.5	2.31	2.09
Novice-Hgh	27.68	57.28	35.3	32.35
Appr-Low	5.89	16.25	10.37	7.21
Appr-Mid	7.23	11.17	12	9.83
Appr-Hgh	8.15	5.98	12.25	8.5
Proficient	38.63	3.97	16.09	32.43
Distinguished	10.27	0.62	11.45	7.36
Total	100	100	100	100
Estimated Index	73.67	38.30	62.75	67.00



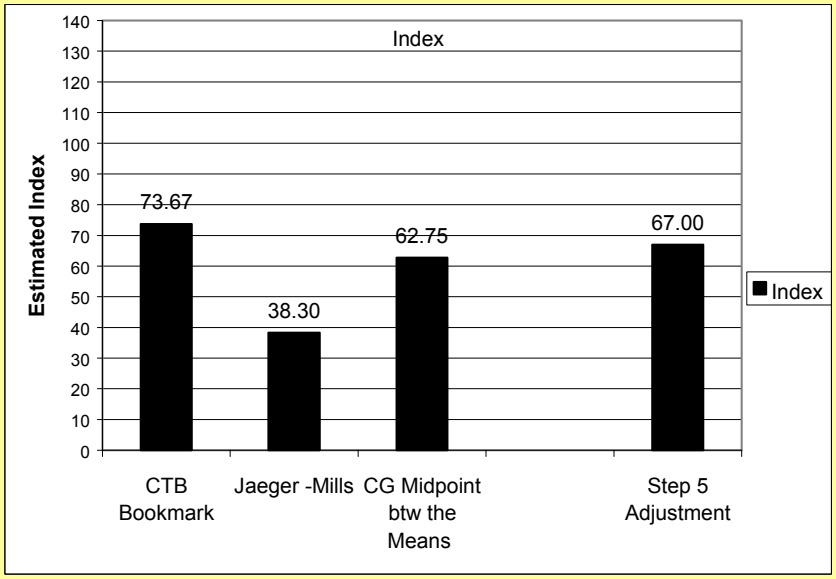
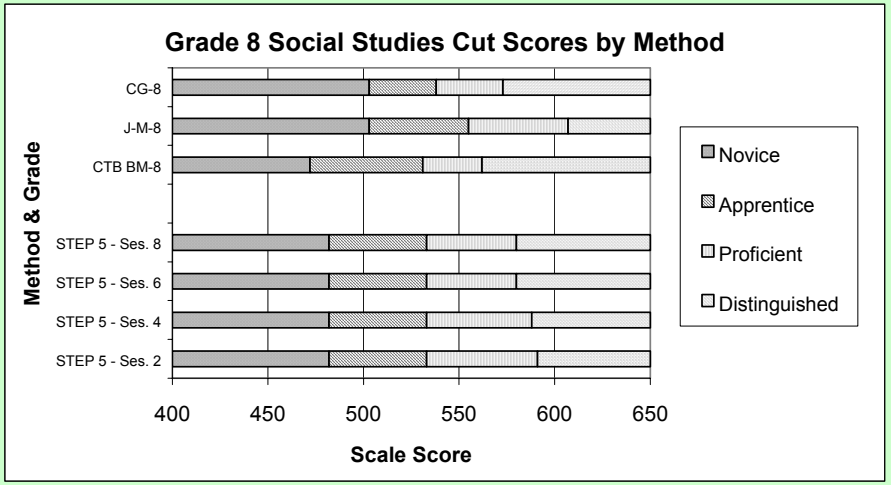


FIGURE SS – 08A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Social Studies

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	482	482	482	482	472	503	503
APP/PRO	533	533	533	533	531	555	538
PRO/DIS	591	588	580	580	562	607	573



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	25.1	25.1	25.1	25.1	20.1	43.8	43.8
Apprentice	46.6	46.6	46.6	46.6	51.2	43.4	33.3
Proficient	25.3	24.8	23.6	23.6	19.1	11.3	16.7
Distinguished	3.0	3.5	4.7	4.7	9.5	1.5	6.1

100

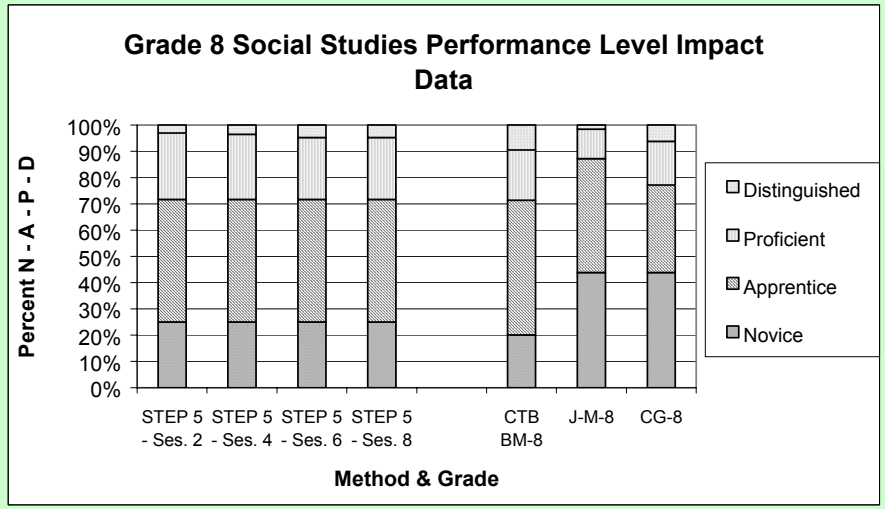


FIGURE SS – 08B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Social Studies

Performance Standard Cut-Scores

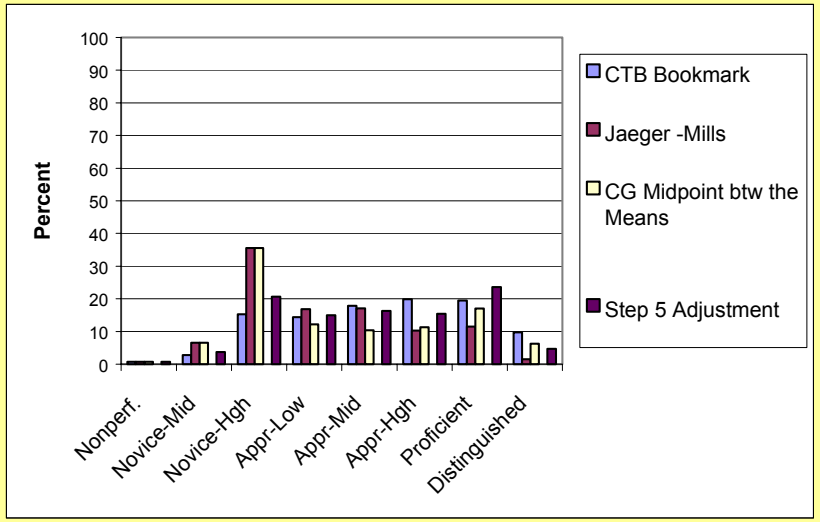
Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	472	503	503	482	<
APP/PRO	531	555	538	533	<
PRO/DIS	562	607	573	580	<

Sub Performance Standard Cut-Scores

Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	423	444	444	430
NOV/APP	472	503	503	482
App L/M	492	520	515	499
App M/H	511	538	526	516
APP/PRO	531	555	538	533
PRO/DIS	562	607	573	580

Percent Students by Performance Standard (Spring 2000)

Nonperf.	0.7	0.7	0.7	0.70
Novice-Mid	2.74	6.58	6.58	3.74
Novice-Hgh	15.26	35.55	35.55	20.64
Appr-Low	14.39	16.83	12	14.93
Appr-Mid	17.88	17.06	10.39	16.30
Appr-Hgh	19.84	10.25	11.28	15.39
Proficient	19.48	11.49	17	23.61
Distinguished	9.71	1.54	6.25	4.69
Total	100	100	100	100
Estimated Index	69.8	48.9	56.0	64.1



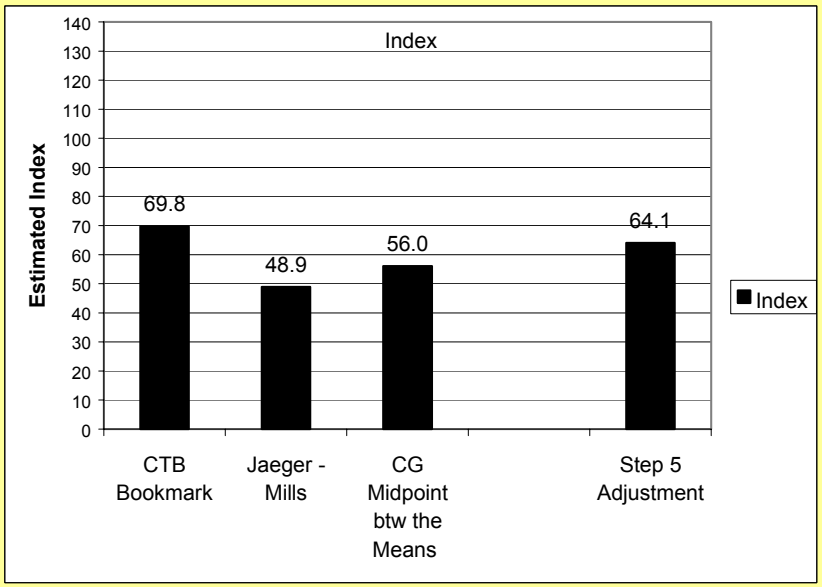
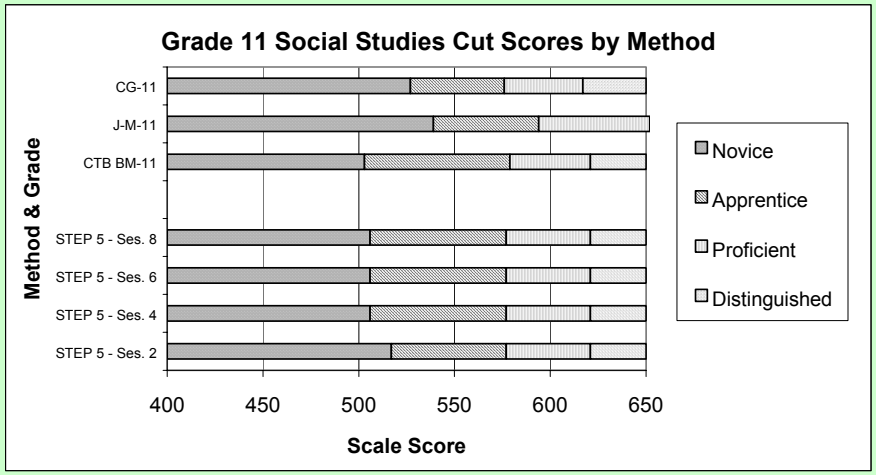


FIGURE SS – 11A – Cut-Points and Performance Level Impact Data

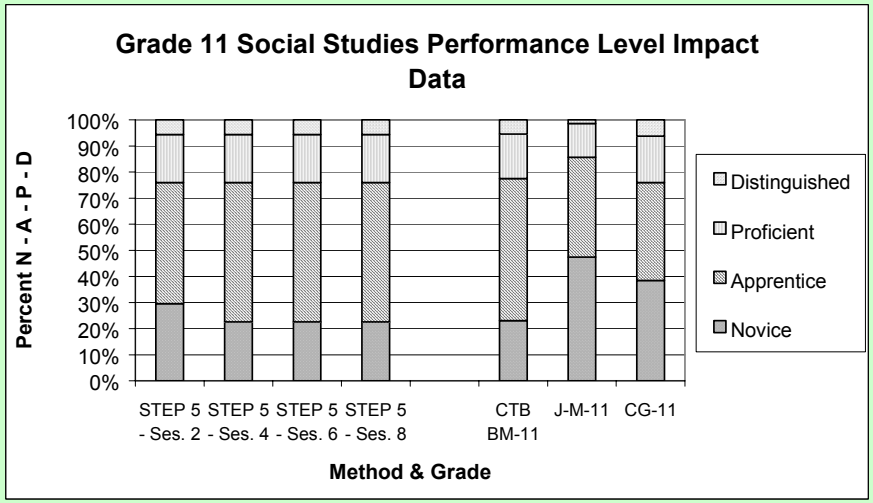
Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Social Studies



Grade 11	STEP 5 - Ses. 2	STEP 5 Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	517	506	506	506	503	539	527
APP/PRO	577	577	577	577	579	594	576
PRO/DIS	621	621	621	621	621	652	617

Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method



Grade 11	STEP 5 - Ses. 2	STEP 5 Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	29.6	22.6	22.6	22.6	23.1	47.4	38.5
Apprentice	46.5	53.5	53.5	53.5	54.5	38.2	37.5
Proficient	18.4	18.4	18.4	18.4	17.0	12.9	17.8
Distinguished	5.6	5.6	5.6	5.6	5.5	1.5	6.2

100

FIGURE SS – 11B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Social Studies

Performance Standard Cut-Scores

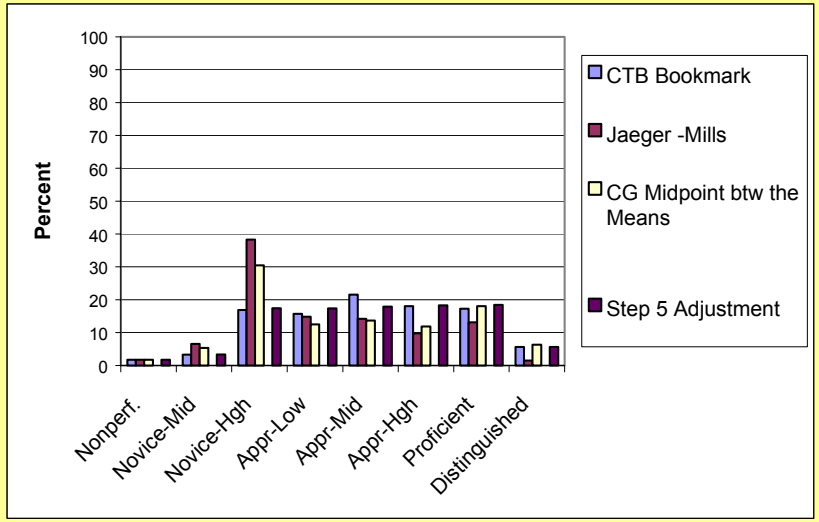
Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	503	539	527	506	<
APP/PRO	579	594	576	577	<
PRO/DIS	621	652	617	621	<

Sub Performance Standard Cut-Scores

Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	444	468	460	446
NOV/APP	503	539	527	506
App L/M	528	557	543	530
App M/H	554	576	560	553
APP/PRO	579	594	576	577
PRO/DIS	621	652	617	621

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.75	1.75	1.75	1.75
Novice-Mid	3.25	6.56	5.34	3.37
Novice-Hgh	16.85	38.26	30.44	17.44
Appr-Low	15.68	14.82	13	17.31
Appr-Mid	21.56	14.23	13.66	17.86
Appr-Hgh	18.07	9.78	11.9	18.28
Proficient	17.25	13.12	18	18.40
Distinguished	5.59	1.48	6.34	5.59
Total	100	100	100	100
Estimated Index	63.5	48.3	58.3	63.5



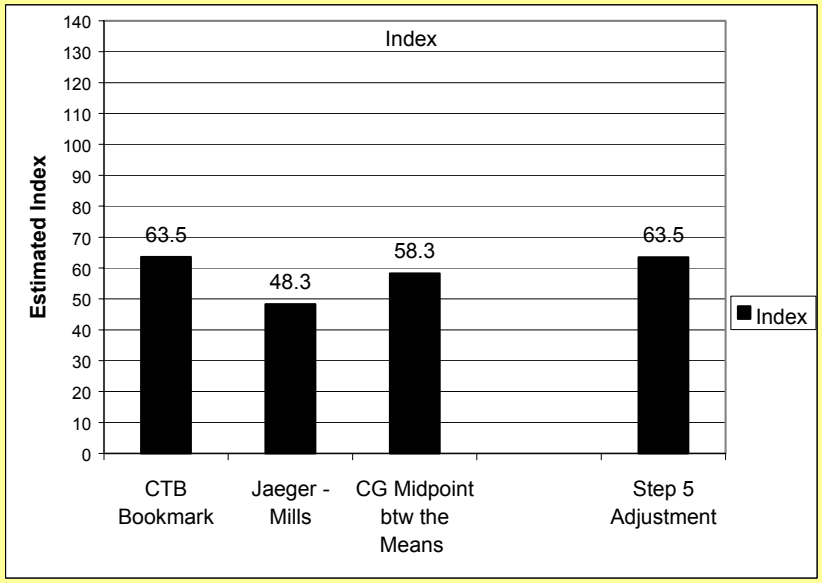
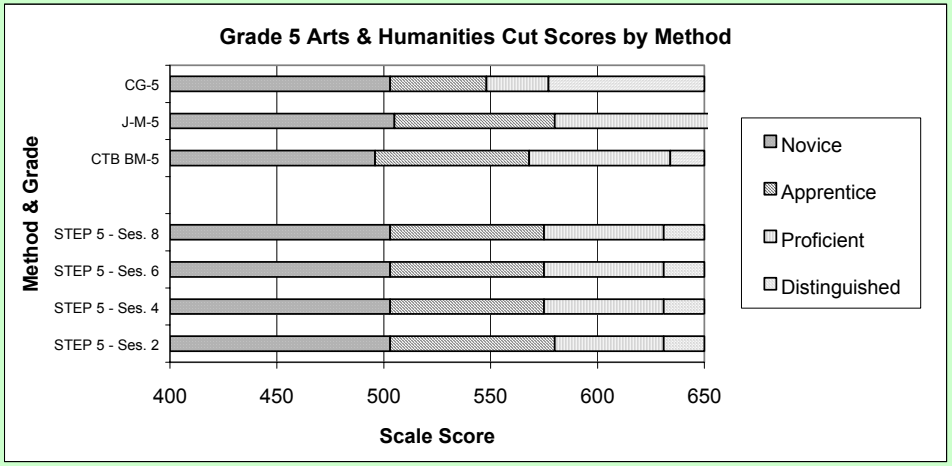


FIGURE AH – 05A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Arts and Humanities

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	503.0	503.0	503.0	503.0	496	505	503
APP/PRO	580.0	575.0	575.0	575.0	568	580	548
PRO/DIS	631.0	631.0	631.0	631.0	634	657	577



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	48.5	48.5	48.5	48.5	44.6	50.4	49.0
Apprentice	40.4	38.3	38.3	38.3	40.0	38.6	26.3
Proficient	7.6	9.8	9.8	9.8	12.3	9.1	12.4
Distinguished	3.5	3.5	3.5	3.5	3.0	1.9	12.4

100

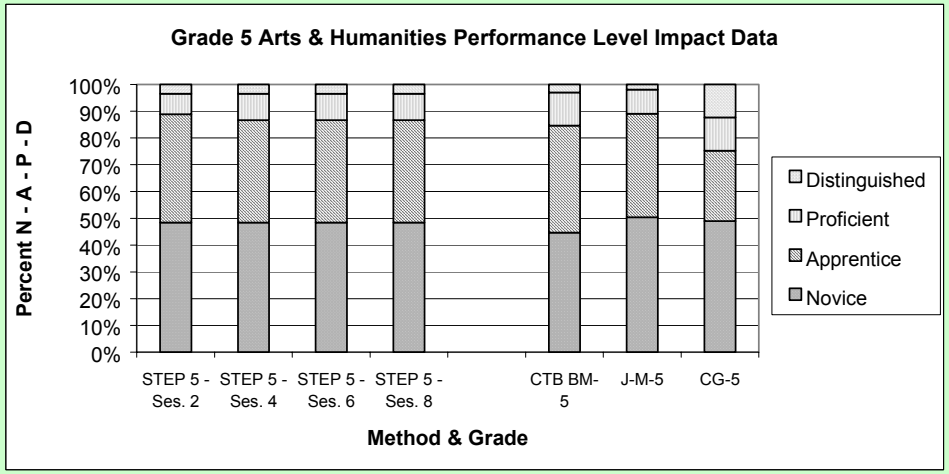


FIGURE AH – 05B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Arts and Humanities

Performance Standard Cut-Scores

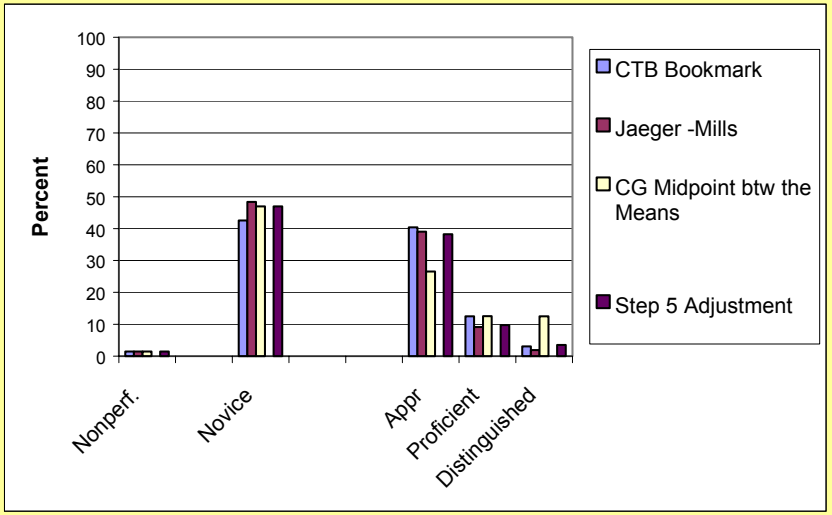
Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	496	505	503	503	<
APP/PRO	568	580	548	575	<
PRO/DIS	634	657	577	631	<

Sub Performance Standard Cut-Scores

Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
NOV/APP	496	505	503	503
APP/PRO	568	580	548	575
PRO/DIS	634	657	577	631

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.47	1.47	1.47	1.47
Novice	42.59	48.39	46.98	46.98
Appr	40.43	39.03	26.54	38.25
Proficient	12.47	9.15	12.53	9.79
Distinguished	3.04	1.96	12.48	3.51
Total	100	100	100	100
Estimated Index	46.5	41.6	52.0	43.8



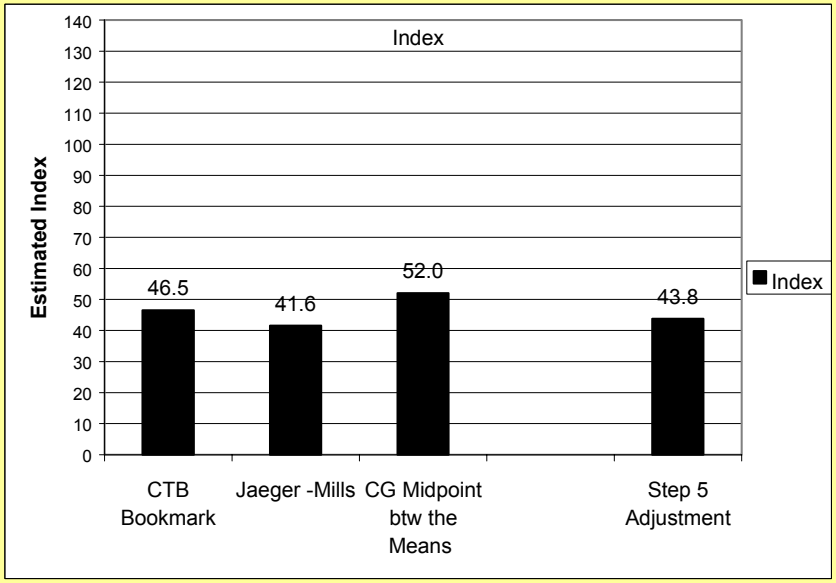
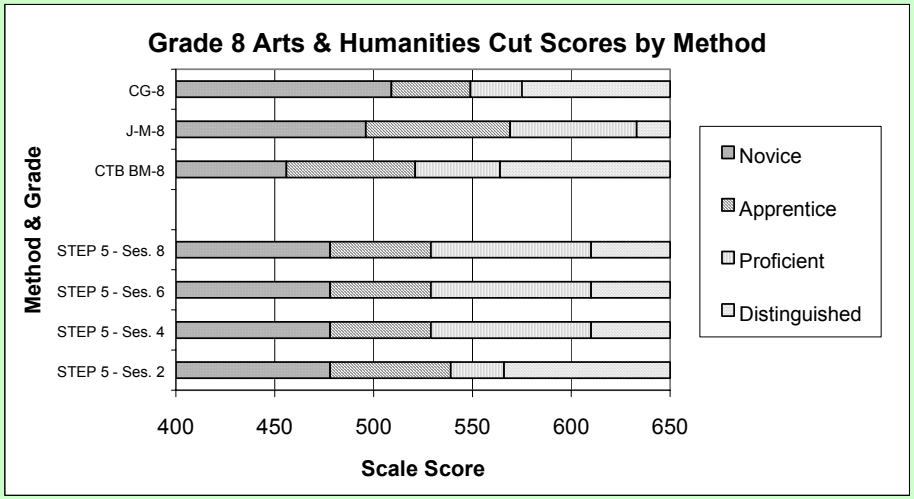


FIGURE AH – 08A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Arts and Humanities

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	478	478	478	478	456	496	509
APP/PRO	539	529	529	529	521	569	549
PRO/DIS	566	610	610	610	564	633	575



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	28.3	28.3	28.3	28.3	19.8	41.9	50.4
Apprentice	43.3	35.8	35.8	35.8	38.6	43.4	25.8
Proficient	13.1	31.4	31.4	31.4	26.2	12.2	12.6
Distinguished	15.3	4.5	4.5	4.5	15.4	2.4	11.3

100

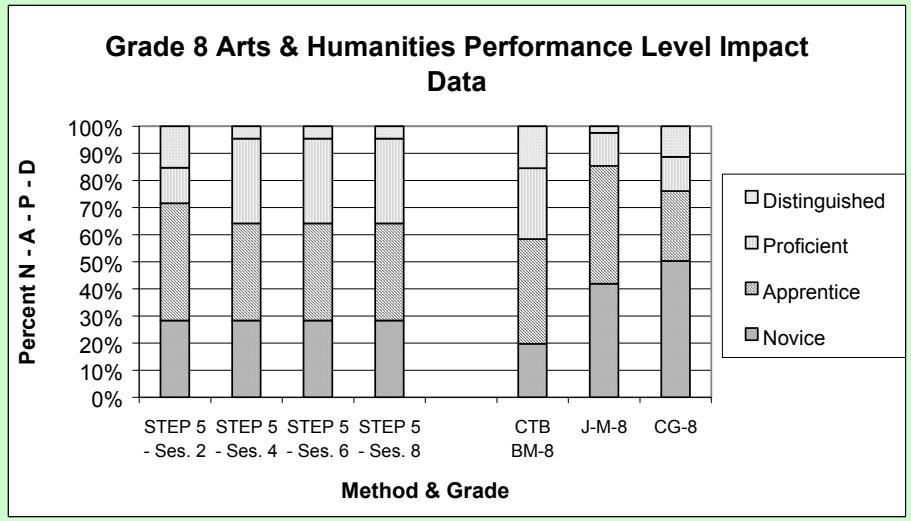


FIGURE AH – 08B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Arts and Humanities

Performance Standard Cut-Scores

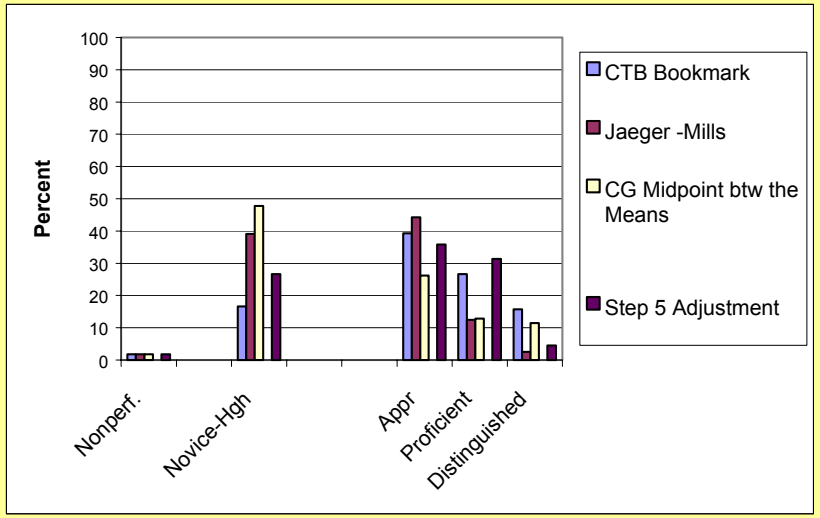
Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	456	496	509	478	<
APP/PRO	521	569	549	529	<
PRO/DIS	564	633	575	610	<

Sub Performance Standard Cut-Scores

Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
NOV/APP	456	496	509	478
APP/PRO	521	569	549	529
PRO/DIS	564	633	575	610

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.75	1.75	1.75	1.75
Novice-Hgh	16.61	39.13	47.73	26.58
Appr	39.29	44.21	26.24	35.84
Proficient	26.63	12.45	12.8	31.36
Distinguished	15.72	2.46	11.48	4.47
Total	100	100	100	100
Estimated Index	74.4	47.5	50.8	62.6



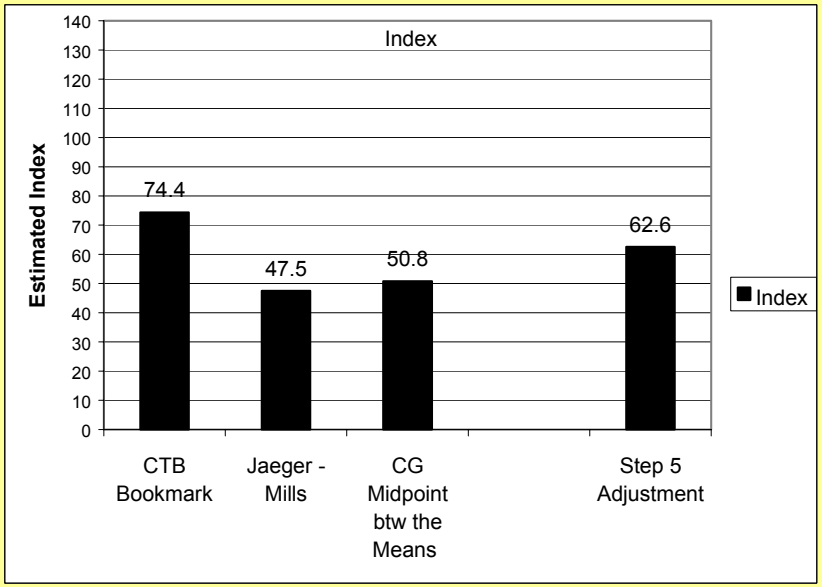
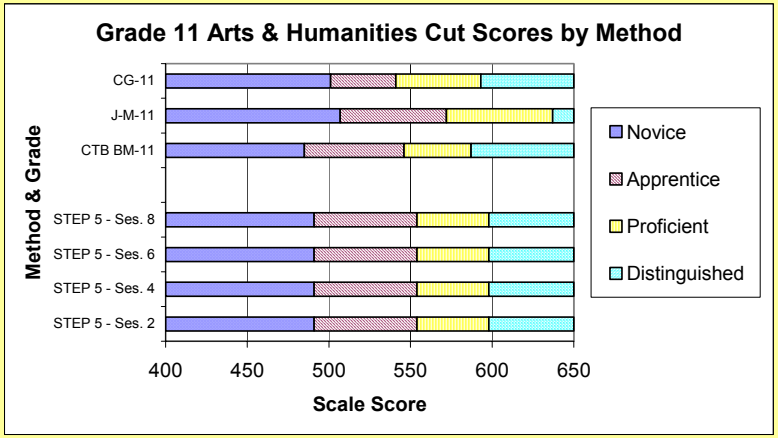


FIGURE AH – 11A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Arts and Humanities

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	491	491	491	491	485	507	501
APP/PRO	554	554	554	554	546	572	541
PRO/DIS	598	598	598	598	587	637	593



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 11	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	38.9	38.9	38.9	38.9	38.9	53.6	48.6
Apprentice	41.6	41.6	41.6	41.6	40.1	35.5	26.9
Proficient	14.1	14.1	14.1	14.1	14.2	9.6	18.9
Distinguished	5.4	5.4	5.4	5.4	6.8	1.4	5.6

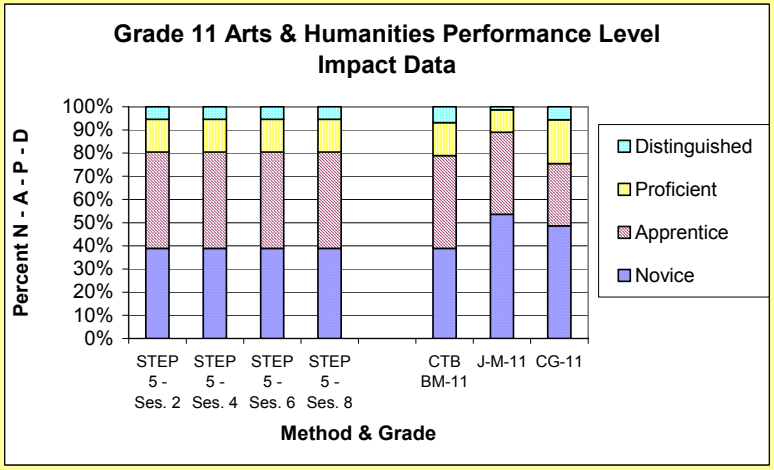


FIGURE AH – 11B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Arts and Humanities

Performance Standard Cut-Scores

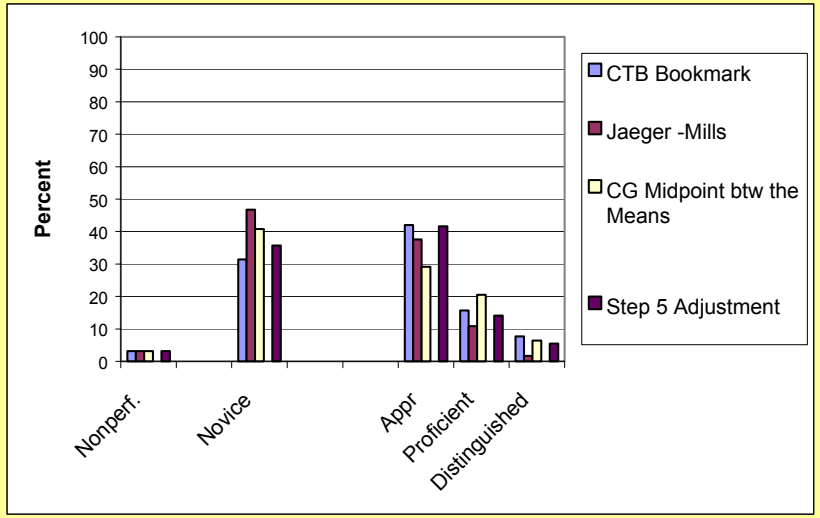
Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	485	507	501	491	<
APP/PRO	546	572	541	554	<
PRO/DIS	587	637	593	598	<

Sub Performance Standard Cut-Scores

Grade 11	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
Nov M/H	432	446	442	436
NOV/APP	485	507	501	491
App L/M	505	529	514	512
App M/H	526	550	528	533
APP/PRO	546	572	541	554
PRO/DIS	587	637	593	598

Percent Students by Performance Standard (Spring 2000)

Nonperf.	3.19	3.19	3.19	3.19
Novice	31.42	46.72	40.73	35.69
Appr	42.01	37.58	29.11	41.62
Proficient	15.7	10.81	20.53	14.08
Distinguished	7.68	1.7	6.44	5.42
Total	100	100	100	100
Estimated Index	55.7	41.8	52.3	51.3



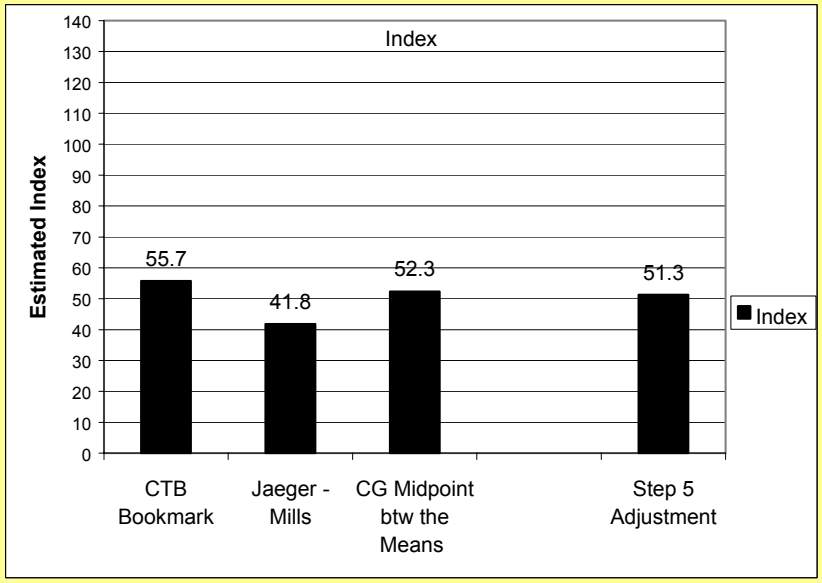
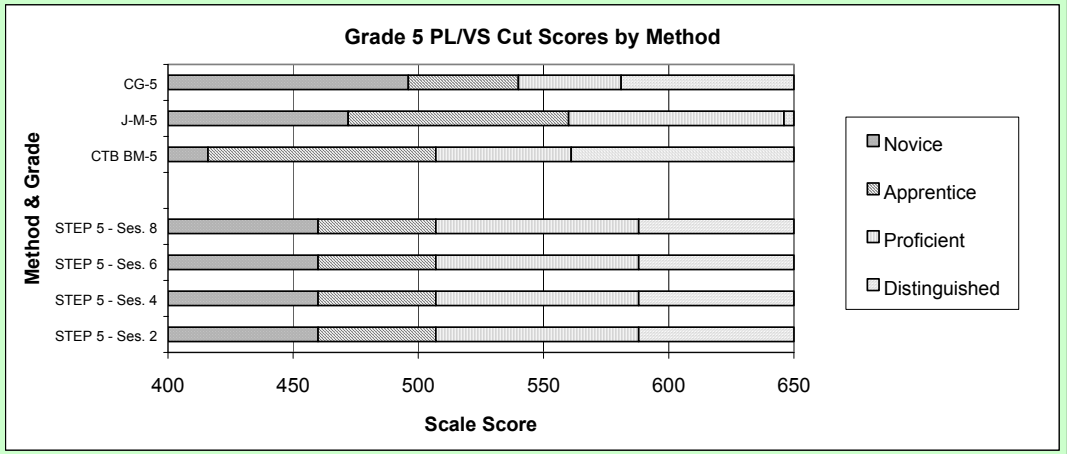


FIGURE PL – 05A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Practical Living/Vocational Studies

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	460	460	460	460	416	472	496
APP/PRO	507	507	507	507	507	560	540
PRO/DIS	588	588	588	588	561	646	581



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 5	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	24.3	24.3	24.3	24.3	10.1	33.2	48.0
Apprentice	30.4	30.4	30.4	30.4	45.1	50.4	27.3
Proficient	36.7	36.7	36.7	36.7	28.4	14.2	14.4
stinguishe	8.7	8.7	8.7	8.7	16.4	2.2	10.3

100

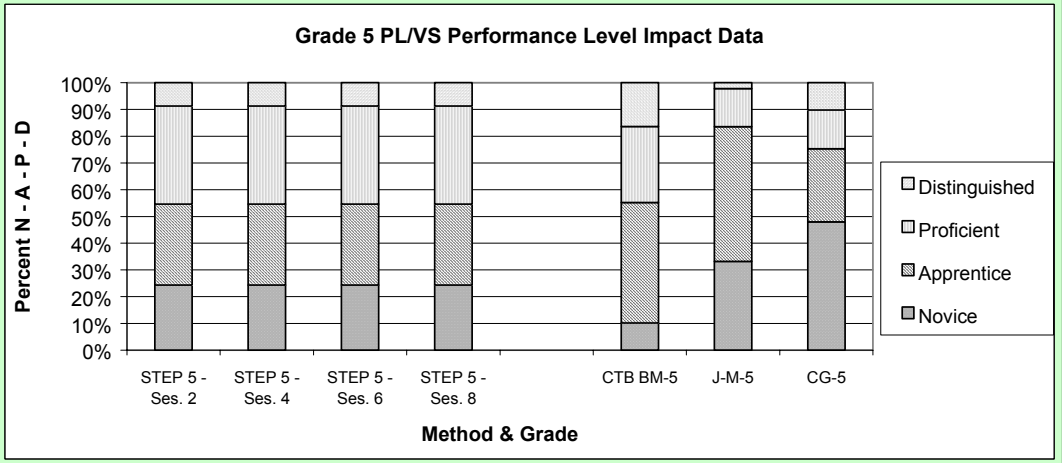


FIGURE PL – 05B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method
Practical Living/Vocational Studies

Performance Standard Cut-Scores

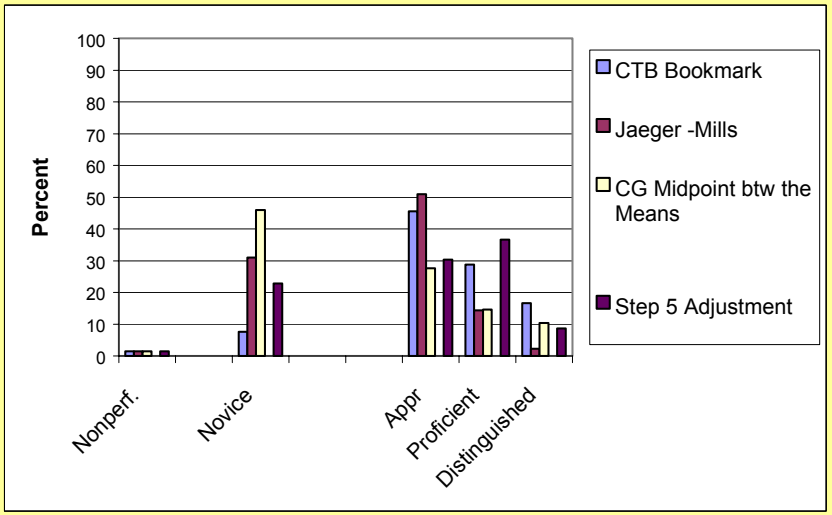
Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	416	472	496	460	<
APP/PRO	507	560	540	507	<
PRO/DIS	561	646	581	588	<

Sub Performance Standard Cut-Scores

Grade 5	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
NOV/APP	416	472	496	460
APP/PRO	507	560	540	507
PRO/DIS	561	646	581	588

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.47	1.47	1.47	1.47
Novice	7.64	30.99	45.98	22.81
Appr	45.56	50.93	27.61	30.39
Proficient	28.72	14.39	14.58	36.66
Distinguished	16.61	2.22	10.36	8.67
Total	100	100	100	100
Estimated Index	80.3	52.1	51.6	70.0



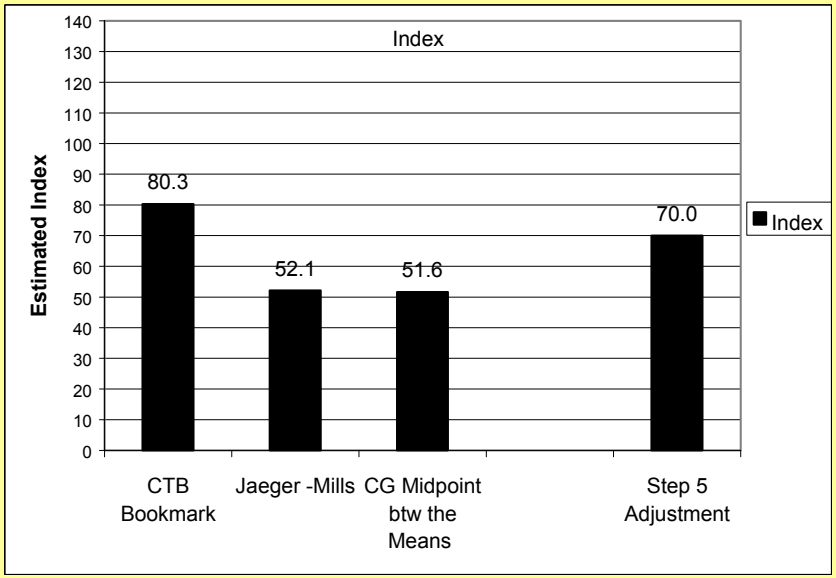
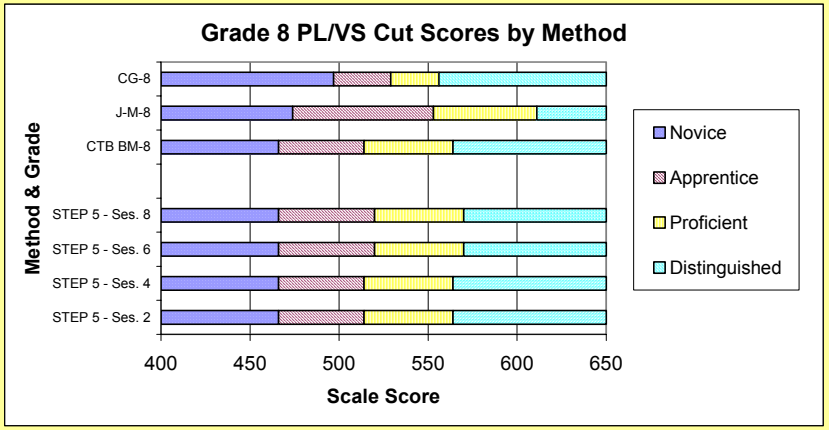


FIGURE PL – 08A – Cut-Points and Performance Level Impact Data

Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Practical Living/Vocational Studies

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	466	466	466	466	466	474	497
APP/PRO	514	514	520	520	514	553	529
PRO/DIS	564	564	570	570	564	611	556



Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method

Grade 8	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	24.8	24.8	24.8	24.8	26.2	31.4	46.0
Apprentice	33.9	33.9	39.8	39.8	33.3	52.5	23.1
Proficient	29.3	29.3	25.7	25.7	28.8	13.0	17.6
Distinguished	12.0	12.0	9.6	9.6	11.8	3.2	13.3

100

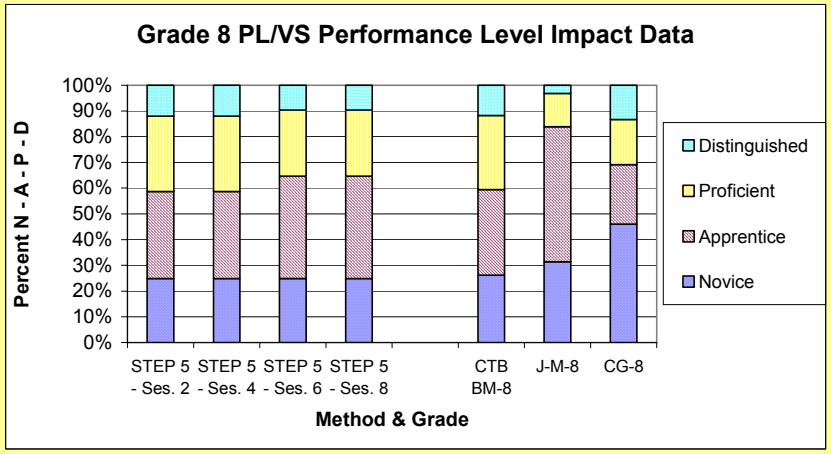


FIGURE PL – 08B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Practical Living/Vocational Studies

Performance Standard Cut-Scores

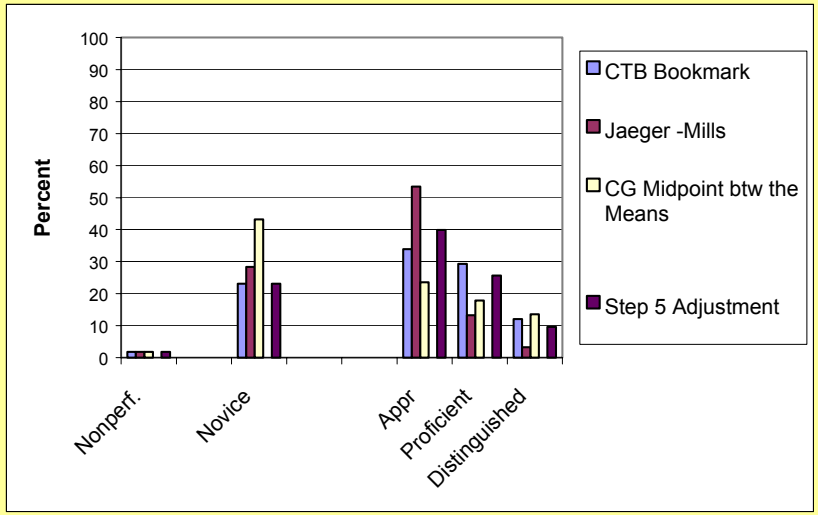
Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	466	474	497	466	<
APP/PRO	514	553	529	520	<
PRO/DIS	564	611	556	570	<

Sub Performance Standard Cut-Scores

Grade 8	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
NOV/APP	466	474	497	466
APP/PRO	514	553	529	520
PRO/DIS	564	611	556	570

Percent Students by Performance Standard (Spring 2000)

Nonperf.	1.79	1.79	1.79	1.79
Novice	23.05	28.36	43.22	23.05
Appr	33.87	53.4	23.54	39.84
Proficient	29.26	13.2	17.87	25.68
Distinguished	12.03	3.25	13.58	9.64
Total	100	100	100	100
Estimated Index	69.4	53.5	56.6	66.1



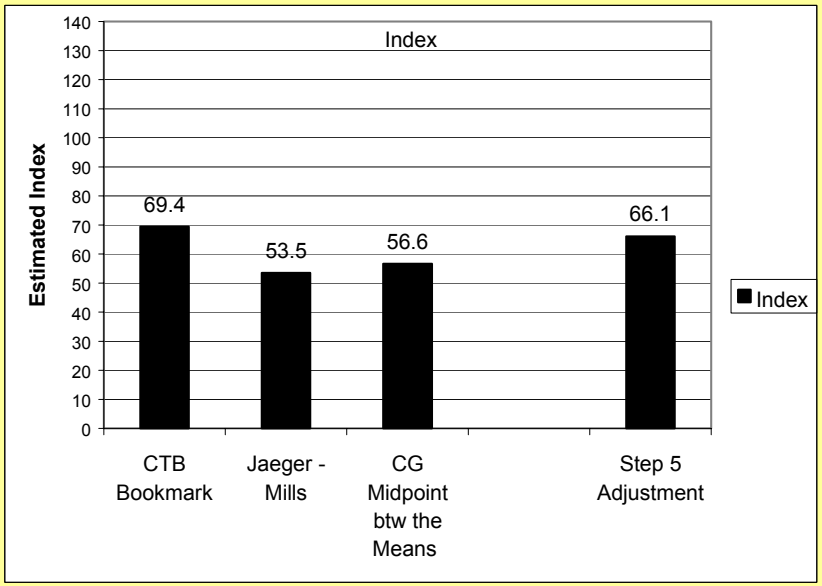
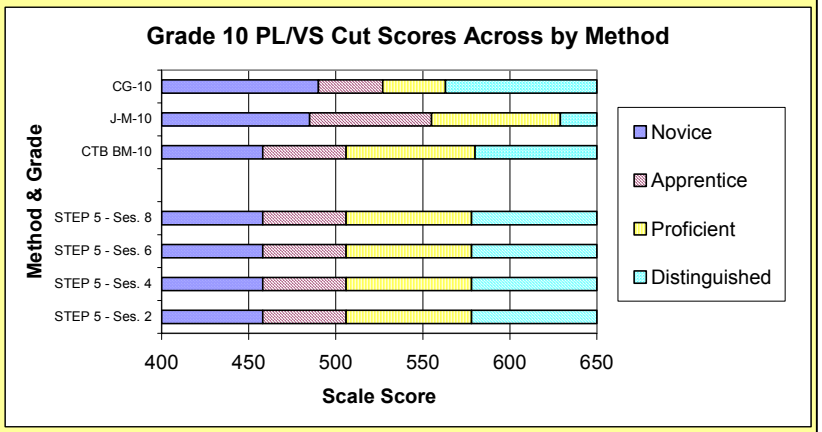


FIGURE PL – 10A – Cut-Points and Performance Level Impact Data

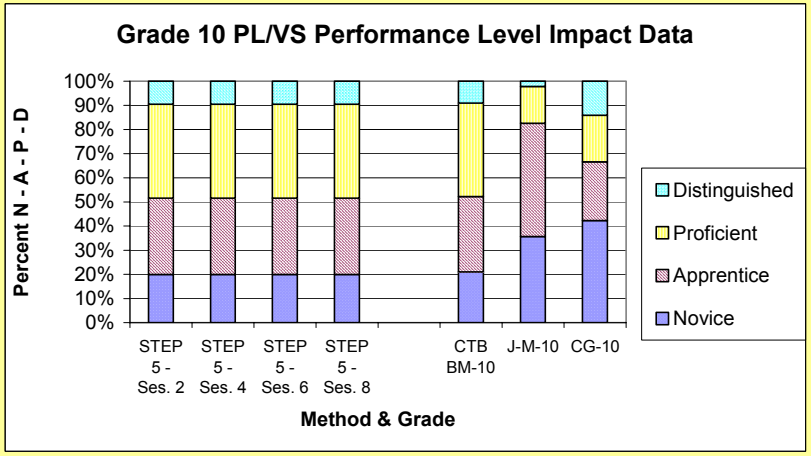
Cut Scores in Scale Score Units for each Performance Level by Standard Setting Method

Practical Living/Vocational Studies



Grade 10	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
NOV/APP	458	458	458	458	458	485	490
APP/PRO	506	506	506	506	506	555	527
PRO/DIS	578	578	578	578	580	629	563

Impact Data -- Percentages of Students in each Performance Level by Standard Setting Method



Grade 10	STEP 5 - Ses. 2	STEP 5 - Ses. 4	STEP 5 - Ses. 6	STEP 5 - Ses. 8	CTB Bookmark	Jaeger - Mills	CG Midpoint btw the Means
Novice	19.9	19.9	19.9	19.9	21.0	35.6	42.3
Apprentice	31.7	31.7	31.7	31.7	31.3	46.9	24.3
Proficient	38.9	38.9	38.9	38.9	38.7	15.3	19.3
Distinguished	9.5	9.5	9.5	9.5	9.1	2.2	14.2

FIGURE PL – 10B – Long-Term Accountability Impact

Cut Scores in Scale Score Units for each Category by Method Practical Living/Vocational Studies

Performance Standard Cut-Scores

Grade 10	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment	
NOV/APP	458	485	490	458	<
APP/PRO	506	555	527	506	<
PRO/DIS	580	629	563	578	<

Sub Performance Standard Cut-Scores

Grade 10	CTB Bookmark	Jaeger -Mills	CG Midpoint btw the Means	Step 5 Adjustment
Nov L/M	325	325	325	325
NOV/APP	458	485	490	458
APP/PRO	506	555	527	506
PRO/DIS	580	629	563	578

Percent Students by Performance Standard (Spring 2000)

Nonperf.	2.22	2.22	2.22	2.22
Novice	17.69	32.52	39.29	17.69
Appr	31.68	47.59	24.6	31.68
Proficient	39.23	15.45	19.55	38.89
Distinguished	9.18	2.22	14.34	9.52
Total	100	100	100	100
Estimated Index	73.4	51.3	59.5	73.5